

# Managing Fiscal Risk in Bulgaria

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Governments need to manage their contingent liabilities and other off-budget sources of fiscal risk — through policy, the budgetary process, and an integrated asset and liability management strategy



## Summary findings

To understand the fiscal position of a country, contingent liabilities and other sources of fiscal risk need to be considered. Brixi, Shatalov, and Zlaoui develop a framework to assess and manage fiscal risk in Bulgaria.

Bulgaria's Currency Board Arrangement has effectively imposed fiscal discipline, but leaves only limited room to accommodate potential fiscal shocks. Through risks embedded in the portfolio of government contingent and direct liabilities, significant fiscal pressures could arise in the future. Major sources of risk include environmental liabilities and investment requirements, collection capacities of the social protection institutions, and further engagement in off-budget programs, such as government guarantees.

To limit the government's exposure to risks, yet accommodate investment needs crucial to growth and development, Bulgaria must find an optimal strategy for

liability management, fiscal reserves, and risk mitigation. Priorities for dealing with existing risks and limiting further accumulation of risks include:

- Mitigating currency and interest rate risks in the government liability structure.
- Implementing proposed institutional and finance reform of the country's pension and health care systems.
- Building adequate contingency reserves.
- Introducing risk-sharing arrangements.
- Prioritizing and placing strict limits on the amounts of new guaranteed obligations.
- Developing government capacity to analyze and manage risks.
- Fully integrating fiscal risk management with other policy considerations in fiscal management, as part of an integrated asset and liability management strategy.

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This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia Region — is part of a larger effort in the Bank to study the quality of fiscal adjustment in its client countries. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Leila Zlaoui, room H4-317, telephone 202-473-3100, fax 202-522-2754, email address [lzlaoui@worldbank.org](mailto:lzlaoui@worldbank.org). Policy Research Working Papers are also posted on the Web at [www.worldbank.org/research/workingpapers](http://www.worldbank.org/research/workingpapers). The other authors may be contacted at [hpolackova@worldbank.org](mailto:hpolackova@worldbank.org) or [sshatalov@worldbank.org](mailto:sshatalov@worldbank.org). January 2000. (46 pages)

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# **MANAGING FISCAL RISK IN BULGARIA**

**Hana Polackova Brix, Sergei Shatalov, and Leila Zlaoui**

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## **1. Introduction**

International evidence has confirmed again and again that fiscal analysis is incomplete if it skips over “hidden” fiscal risks, such as obligations made by the government outside the budget. First, as Kharas and Mishra (1999) explain, analyses of past increases in the stock of government debt have shown that governments often accumulate debt as a result of “hidden deficits” rather than reported budget deficits. Hidden deficits mainly arise from debt structure, as currency, maturity or interest rate risks materialize, and from off-budget government obligations, such as contingent liabilities that fall due. Most recently, some of the fiscal pressures that have emerged from the East Asian crisis can be attributed to the fiscal risks due to the governments’ contingent liabilities (World Bank, 1999).

Second, any changes in the reported budget deficit are an illusion if they are accompanied by offsetting changes in the value of public assets and in the country’s exposure to fiscal risks, such as government contingent liabilities (Easterly, 1998). Furthermore, as Selowsky (1998) emphasizes, reported deficit improvements do not necessarily imply “quality” of fiscal adjustment, which has the dimension of sustainability as well as efficiency. Narrow interests in reducing budget deficit may actually increase rather than reduce government exposure to fiscal risks, and deteriorate rather than improve the prospects of future fiscal performance.

Third, the conventional approach to the analysis of deficit sustainability is limited in two ways: it looks only at the liability side of the public sector balance sheet and it considers only direct liabilities, ignoring contingent liabilities, both explicit and implicit.<sup>1</sup> In this context, fiscal vulnerability is defined by Hemming (1999) as a situation where the government is exposed to the possibility of failure to achieve its broad fiscal policy objectives. It is concerned in particular with the emergence of unexpected fiscal risks and policy challenges and with the government’s capacity to respond to them. Fiscal vulnerability takes into account: (a) the initial fiscal position (including the central government budget, other levels of government, extrabudgetary funds and quasi-fiscal activities, assets and liabilities, contingent liabilities, fiscal indicators), (b) sensitivity of the fiscal position to short-term risks, such as macroeconomic volatility, called contingent liabilities, and unclear expenditure commitments, (c) medium- and long-term fiscal sustainability (debt dynamics, baseline projection and stress testing, and long-term pressures from demographic trends, resource depletion, etc.), and (d) structural or institutional weaknesses (expenditure composition, revenue system, deficit financing, government access to debt markets, institutional capacity for fiscal management).

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<sup>1</sup> Under the conventional approach, the actual deficit is compared with the estimated sustainable deficit level that will keep the debt to GDP ratio constant for feasible rates of growth, real interest, and inflation. This approach assumes that keeping a constant ratio of public debt to GDP will ensure public sector solvency and avoid debt crises in the future. Another, less stringent requirement is to test for the no-Ponzi scheme condition for public debt, followed up by the neoclassical solvency approach. This methodology checks for public solvency by comparing the ratio of public debt to GDP with the real interest rate. If the debt ratio systematically grows faster than the real interest rate, the public sector is considered insolvent. For background on fiscal sustainability analysis, see Anand (1988, 1989, and 1990).

Analysis of fiscal risks becomes increasingly important. Reasons include increasing volumes and volatility of private capital flows, transformation of the state from financing of services to guaranteeing particular outcomes, and related to both of these, moral hazards in the markets, and fiscal opportunism of policy makers. Fiscal risks become particularly threatening in countries with a limited scope for maneuver in government financing. Limited access to debt market and constraints on the use of monetary policy instruments reduce the amount of fiscal risks that governments “safely” take on.

Bulgaria’s ability to absorb fiscal risks is limited. Currency board arrangement, limited access to debt markets, already high levels of tax revenues, and a large share of nondiscretionary expenditures severely constrain the scope for government maneuver in cases when fiscal risks materialize. The country is recovering from years of macroeconomic instability, high inflation and currency crisis. Its economy is still fragile and realization of fiscal risks thus may have very serious consequences for the country’s economic and social development as well as fiscal performance. The objective of accession to the European Union also demands the government to maintain all fiscal risks under a very tight control while accommodating substantial infrastructure and environmental investment to achieve high growth and/or meet accession requirements. With already high level of indebtedness, Bulgaria faces a difficult trade-off. Should Bulgaria adopt a very conservative stance towards debt and fiscal risk at the expense of investment and growth or rather accept a slower pace of dis-indebtedness and guarantee the resources needed for economic restructuring and mitigation of the impact on the poor and vulnerable? So far, Bulgaria has been successful in reducing its debt burden while relying on high levels of fiscal reserves as a main contingency instrument. Its future investment and developmental agenda, however, call for a better mix of fiscal reserve, debt management and risk mitigation strategies.

The objective of this paper is to present a systematic analysis of fiscal risks in Bulgaria and advise on risk monitoring, assessment, management and mitigation strategies. The paper is divided into four sections. After this introduction we present a simple framework, the Fiscal Risk Matrix, to identify and classify Bulgaria’s fiscal risks. We set our analysis of fiscal risks in a broader macroeconomic and institutional background, leaning toward assessment of Bulgaria’s overall risk exposure and fiscal vulnerability. Section II offers analysis of the individual sources of fiscal risk in Bulgaria. We analyze the size, probability and sensitivity of risks arising from direct and contingent, both explicit and implicit government liabilities. Section III outlines our recommendations for Bulgaria to strengthen its fiscal risk management framework and debt management policy. We offer a set of immediate and medium-term measures to contain some of the main sources of fiscal risk. Furthermore, building on country experience with medium-term expenditure framework (Campos and Pradhan, 1996), we develop a broader medium-term fiscal framework, as an institutional arrangement for country fiscal management. Finally, we summarize our findings in section IV.

## I. Is Bulgaria Exposed to Fiscal Risks?

### 1. Bulgaria's Fiscal Risk Matrix

As in Polackova (1998) we focus on fiscal risks emerging from government obligations of four types: direct explicit, direct implicit, contingent explicit and contingent implicit (table 1). Government *direct explicit liabilities* are specific obligations that will fall due with certainty and are defined by law or contract. They are the subject of traditional fiscal analysis and, in Bulgaria, particularly include sovereign debt service and, in the long term, legally mandated pension and health expenditures. Government *direct implicit liabilities* represent a moral obligation or political, rather than legal, burden on the government that will occur with certainty. They often arise as a presumed consequence of public expenditure policies in the longer term. In Bulgaria, the largest are accumulated and expected public investment needs to deliver anticipated public services and meet key requirements for accession to the European Union. *Explicit contingent liabilities* represent government's legal obligations to make a payment only if a particular event occurs. In Bulgaria, state guarantees for nonsovereign borrowing and obligations for past environment damages are the main examples of this type of government obligation. *Implicit contingent liabilities* are those that are not officially recognized until a failure occurs. The triggering event, the value at risk, and the required size of the government outlay are uncertain.

**Table 1 Bulgaria's Fiscal Risk Matrix**

| <b>Sources of fiscal risk</b>   | <b>Direct</b> (obligation in any event)   | <b>Contingent</b> (obligation if a particular event occurs)  |
|---|---|--|
| <b>Explicit</b><br>Government obligation is recognized by law or contract   | <ul style="list-style-type: none"> <li>• Foreign and domestic sovereign debt (size and structure)</li> <li>• Future pension expenditures required by law</li> <li>• Health expenditures required by law</li> </ul>  | <ul style="list-style-type: none"> <li>• Individual state guarantees for nonsovereign borrowing and obligations</li> <li>• Obligation to recover past environment damages assumed in enterprise privatization and other environment liabilities</li> <li>• Obligations of business promotion bank</li> <li>• Obligations of export insurance agency (insurance policies to cover political and medium-term commercial risks)</li> <li>• Obligations of state fund for agriculture</li> </ul> |
| <b>Implicit</b><br>A "moral" obligation of the government that mainly reflects public expectations and pressures by interest groups | <ul style="list-style-type: none"> <li>• Accumulated and expected public investment needs to sustain delivery of public services and meet key requirements for accession to the EU</li> <li>• Future recurrent costs of public investment projects</li> </ul> | <ul style="list-style-type: none"> <li>• Environment commitments for still unknown damages and nuclear and toxic waste</li> <li>• Clean up of enterprise arrears and liabilities</li> <li>• Default of municipalities on own non-guaranteed debt, own guarantees, and/or own obligations to provide critical public services</li> <li>• Support to the banking sector in case of crisis</li> </ul>   |

Obligations listed above refer to the fiscal authorities, not the central bank.

***Government exposure to risks is not negligible***

Bulgaria's future fiscal position may suffer from short-term shocks arising from fiscal risks identified in the Fiscal Risk Matrix. *Structure and size of Bulgaria's sovereign debt* are somewhat worrisome. Even after the 1992-94 successful restructuring, Bulgaria remains one of the most heavily indebted countries of Central and Eastern Europe. High debt levels remain a significant source of fiscal vulnerability, threatening the country creditworthiness, and impeding Bulgaria's access to international financial markets.

Of the 83 percent of GDP of public debt, about 90 percent is foreign, nearly a half in Brady bonds and the rest mostly owed to international financial institutions. Most debt instruments are long-term, with a floating interest rate, and denominated in US dollars. The external debt service ratio is projected to remain within a manageable, but rather high range of 20-22 percent of exports of goods and services<sup>2</sup>. The debt structure is rigid and implies

<sup>2</sup> Traditionally, a debt service ratio of 25 percent or higher is considered to be a fairly reliable predictor of debt crisis. Bulgaria's debt service ratio is below this crisis warning threshold, but is still rather high; further



significant refinancing risk. Bulgaria has not regained reliable capital market access and faces volatility of investors' preference. Integrated asset and liability framework indicates that currency risk is on average naturally hedged by dollar-denominated exports but is significant with regards to short-term exchange rate movements. Interest rate risk is also substantial. One percentage point rise in the international interest rates (Libor) would translate into an additional 70-80 million US dollars in annual debt service over 2000-2004. Stress-testing interest rate indicates that a 3 percentage points rise in Libor would bring Bulgaria's debt service ratio above 25 percent of exports – a level that often serves as a crisis warning indicator.

Other risks to fiscal stability in Bulgaria are mainly associated with the remaining transition process and with the cost of economic and social restructuring. Potential fiscal pressure may particularly arise from the financial and *environmental liabilities* of state-owned enterprises that the government may have to assume during restructuring, privatization or liquidation of enterprises. Part of these liabilities have already been made explicit, others are still unknown.

Environment, together with the country's infrastructure network and energy sector, also stands for a large amount of *investments required* in the context of Bulgaria's accession to the European Union. Overall environmental expenditures are expected to reach about US\$8.5 billion, that is 69 percent of 1999 GDP, by 2015, implying an approximate US\$0.5 billion per year in annual public investment expenditure. The Bulgarian government public investment program for 2000-2006 envisages an annual disbursement of US\$ 400 (3 percent of GDP in 2000) million for environmental projects. With public investment projected at about 3.5 percent of GDP in 2000 and the years ahead, the need for investment in infrastructure, institutional capacity and social welfare is likely to result in significant fiscal pressures. Hence, Bulgaria's development and progress toward the EU accession will rely on the availability of concessional financing and on private sector participation. Private sector participation as well as loans from Internal Financial Institutions may demand government guarantees. Refraining from providing guarantees would entail developmental costs. On the other hand, generous and imprudent guarantee policy would generate moral hazard in the markets and fiscal threats to the government.

In the medium term, the government faces a trend of *increasing pension and health spending*, possibly averted by the proposed reforms. Both pension and health reforms, however, may generate significant transition cost. With reform, the government is likely to face around 2 percent of GDP of increased deficits on its pension account by 2001. Without reform, pension deficits are projected up to 2.7 percent of GDP. Total health expenditures are expected to increase from 4 to above 6 percent of GDP during 1999-2001. With reform, a newly established Health Insurance Fund is expected to mobilize about 1.5 percent of GDP directly from individuals and employers (offset by a reduction in funds collected by the National Social Security Institute). These reforms, however, will alleviate the state budget only after better

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sections of this paper suggest that adverse developments could hike the debt service ratio above the 25 percent warning threshold.

institutional capacities to collect pension and health contributions are in place. Currently several institutions are involved in the collection of taxes and social contributions and the government wants to establish by mid-2000 a single revenue collection agency centralizing collection and control functions.

As for contingent liabilities, unlike in most other EU accession countries Bulgaria's risk exposure is relatively modest, though not unsubstantial. The government has applied prudent limits and regulations for *state guarantees*. Presently, the government reports the stock of guarantees of about 17 percent of GDP. Of these obligations, 9 percent of GDP is de facto direct debt owed to the IMF. Government obligation for almost 4 percent of GDP of domestic guaranteed debt expires in April 2000. Calls on the remaining guarantees, which currently amount to about 4 percent of GDP, however, could cause uncomfortable fiscal losses during 2000-2004. In addition, for private sector development purposes, the government guarantees *obligations of agencies*, like the State Fund for Agriculture, the Export Insurance Agency, and the Business Promotion Bank. These are small so far. As Bulgaria's creditworthiness remains weak, also the country's private non-guaranteed debt is very low.

Pressure on the government to provide guarantees and other forms of off-budget support, through the various existing and new state-guaranteed agencies, is likely to increase as the economy recovers, private investors substitute for public investment in agriculture, commercial banks continue to abstain from providing long-term credit, and foreign creditors fear of uncertainties.

In the *financial sector*, the 1996-97 hyperinflation, crisis, and subsequent policy actions by the Bulgarian National Bank have effectively cleaned up the banking sector. The ensuing reform has successfully capped both explicit and implicit government obligations for lost deposits and failed banks. Since then, an improved supervision has controlled exposure of banks to liquidity and interest rate risks. The quality of bank's loan portfolio and foreign exchange exposure cause concern but not a significant fiscal risk so far.

Government *institutional arrangements* for managing fiscal risks are strong in many aspects but not totally reassuring. Parliamentary scrutiny over contingent liabilities and public disclosure of their aggregate levels is good. Future fiscal pressures may, however, arise from legal loopholes or from the government practice to cover all risks under every guarantee, which insures both creditors and debtors against their possible failures. Finally, the government *capacity* to analyze, mitigate and manage risk needs to be enhanced. The government is presently not fully aware about the size and urgency of its risk exposure. And, without implementing new approaches, such as public-private risk sharing mechanisms, contingent liabilities may have negative consequences for the markets as well as for future government budgets.

## 2. Why Fiscal Vulnerability

What will be the government's capacity to respond to the realization of fiscal risks in the future? Building on Hemming (1999), in this section we briefly sketch Bulgaria's fiscal position, its sensitivity to risks, and sources of risks.

### *Current fiscal position appears good*

Bulgaria's *current fiscal position* has been held in check following the introduction of a currency board arrangement in 1997<sup>3</sup>. General government budget deficit dropped from 12 percent of GDP in 1996 to 2.5 percent in 1997. In 1998, the budget registered a surplus of 0.9 percent of GDP and in 1999, despite the slow-down of growth due to the Kosovo crisis, deficit is expected to stay below 1.5 percent of GDP.

Recent revenue performance has been strong and resilient to the economic shocks that have marked the 1998-99 period (the Russian and Kosovo crises). General government revenues increased from 31.7 percent of GDP in 1997 to 36.8 percent of GDP in 1998 and an estimated 38 percent of GDP in 1999. General government expenditures, however, are also on the rise. For 1999, they are projected to reach 39.5 percent of GDP, up from 35.8 percent in 1998, recovering from their collapse during the 1996-97 crisis. Leading this trend, social expenditures have increased by 1.8 percentage point, while wages and contingency to pay for the cost of structural reforms by 0.8 and 0.7 percentage points, respectively.

Beyond general government budgets, Bulgaria's fiscal position does not suffer from any imminent major pressures either. The Currency Board Arrangement (CBA)<sup>4</sup> precludes the National Bank from engaging in quasi-fiscal activities. The number of extrabudgetary funds declined from over 1000 in 1998 to 28 in 1999. We limit our analysis here to the largest ones, the Pension Fund, Health Fund and Agricultural Fund. Though these funds are rife with fiscal risks, which we will discuss in the following section, their positions appear balanced so far.

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<sup>3</sup> Annex 1 presents Bulgaria's fiscal framework for 1997-2002, including the main revenue and expenditure items as well as the projected deficit and its financing.

<sup>4</sup> Introduced after a spell of large deficits and hyperinflation in July 1997, the currency board arrangement came as a response to several unsuccessful money-based stabilization attempts and to widespread lack of financial discipline of large state-owned enterprises and financial institutions as well as budgetary agencies. CBA was meant to stop a vicious circle of government subsidies and soft commercial bank financing, that have kept loss-making enterprises afloat. The arrangement has fixed the domestic currency, lev (BGL), to the German mark, and prescribed full coverage of the monetary base with foreign reserves. Furthermore, it cut off central bank credit to both the government and the banking sector. Since January 1, 1999, the lev is fixed to the Euro at the same rate as the DM peg to the Euro. In addition, the original rate BGL1000/DM was changed on July 5, 1999 when three zeros were removed, the denomination became BGN, and the peg 1BGN per 1DM. Under the June 1997 law, the Bulgarian National Bank is not allowed to extend credit to the State or any state agency except against purchase of special drawing rights from the IMF. Similarly, the Bulgarian National Bank (BNB) is forbidden to extend credit to banks, except under very strict conditions in its narrowly defined role of lender of last resort.

Medium-term and long-term sustainability is at moderate risk. Bulgaria's fiscal framework presented in Annex 1 as well as debt dynamics, which we will illustrate later, suggests relatively stable baseline. Main fiscal pressures come from debt service payments and transitional costs associated with the implementation of the health and pension reforms. In the baseline, debt service payments will remain substantial at about 20-22 percent of exports of goods and services, growing to about US\$1.4 billion per annum by 2004. The pension deficit and health expenditures increase by 2 and 1 percent of GDP, respectively, between 1999 and 2001.

The government has committed to a fiscally responsible behavior. Under its IMF supported program and with EU accession objective, the government intends not to run deficits in excess of 3 percent of GDP and in the medium term reduce its debt to GDP ratio below 60 percent (thus comply with the Maastricht deficit and debt criteria). Furthermore, the government aims at keeping the debt service below 25 percent of exports and 30 percent of fiscal revenues, at pursuing market risk benchmarks in its debt portfolio, and at cushioning possible future shocks with large reserves.

In line with the requirements of a currency board arrangement, Bulgaria has maintained comfortable levels of both external (central bank) and fiscal reserves. External reserves have exceeded the equivalent of six months of imports of goods and non-factor services. On its Fiscal Reserves Account (FRA), which consists of the balances of all government budgetary and extra-budgetary accounts in the banking sector, the government maintains certain floor throughout the fiscal year. This floor which exceeded 8 percent of GDP at the end of 1998 is the main contingency instrument to address selected fiscal risks. The floor on the FRA can be adjusted to accommodate larger than expected structural reform-related contingent expenditures, higher than projected interest payments or shortfall of official financing relative to program projections<sup>5</sup>. Large reserves impose, however, opportunity cost of investment and growth. As we will discuss further, only major improvements in risk mitigation and risk management capacity would reduce the reserve requirement, opening a way toward a better mix of reserve and hedging strategy and releasing resources for investment.

### ***Room to accommodate fiscal risk is, however, limited***

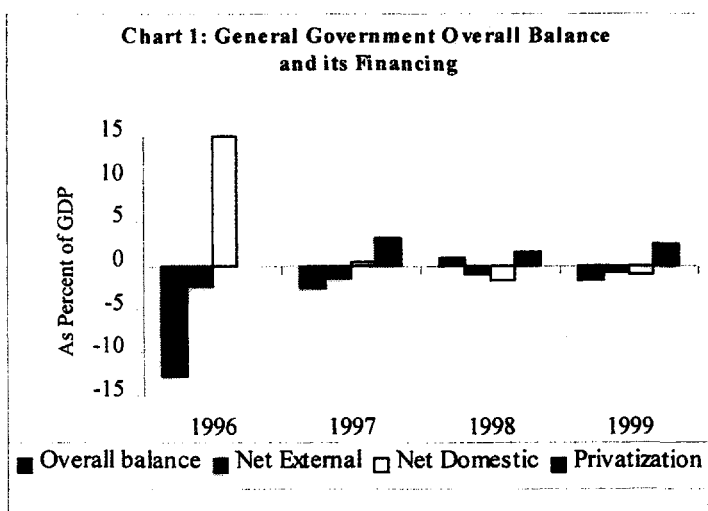
A combination of factors explains why Bulgaria's fiscal position is less resilient to fiscal risks than it appears from the analysis of the current fiscal position. First, while the CBA is very effective in achieving fiscal stability, it does by definition reduce the range of options otherwise available for deficit financing, and therefore the scope for fiscal expansion or for accommodating sudden expenditure hikes due to the materialization of unaccounted for fiscal risks. Out of the four possibilities that are available to most countries in financing their public sector deficit (printing money, running down foreign reserves, and foreign and domestic government borrowing), the CBA rules out the former two. Foreign and domestic borrowing, along with

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<sup>5</sup> In addition, the government allocates resources within the budget for contingent expenditures. Around 1 percent of GDP in 1999 and 1.2 percent of GDP in 2000 were allocated for possible calls on guarantees and implementation problems of pension and health reforms.

exceptional proceeds such as privatization revenues, thus remain the only means of deficit financing and of raising money to face sudden shocks.

Following the CBA adoption, the main source of deficit financing shifted from the domestic banking system (on a net basis) to privatization revenues (chart 1). High negative net domestic financing in 1998-99 reflects the amortization of past bonds. Net external financing also shows a negative transfer of 1.3 percent of GDP in 1997 declining to 0.7 percent in 1999. In 1998, the overall balance registered a surplus equivalent to 0.9 percent of GDP. Privatization receipts contributed to



68 percent of the overall financing while net domestic and external financing were negative. A deficit of 1.5 percent of GDP is projected for 1999 while privatization receipts are expected to approximate 2.6 percent of GDP, comfortably covering the financing needs. Privatization receipts cannot be used for current budgetary expenditures. They enter the fiscal reserve account and can be used for debt repayments and investment financing. The privatization receipts of the municipalities can be used for ecological projects, investment debt repayments or writing off non-performing loans of municipality-owned enterprises.

As the privatization process comes close to an end, revenues from the sale of state-owned enterprises will fall down. The largest and most profitable state-owned enterprises have already been or are now being privatized. Further sizeable revenues could be expected from the privatization of BTC (Bulgaria telecommunications company), Bulgartabac (tobacco company), Bulbank (the largest state-owned bank) and several power distribution companies in 2000-01, after which the scope for raising substantial revenues from privatization shrinks. This may raise questions about the availability of resources for debt payment and investment financing.

Second, in responding to shocks, the government faces a constraint on both the revenue and expenditure side. With revenues at about 38 percent of GDP in 1999 and a bias toward payroll tax, further increase in tax rates would damage investment and growth. Actually, the main fiscal policy objective is to broaden the tax base and strengthen collection in order to lower tax rates on labor and income.

Social security contributions rates have remained high at (depending on workers categories), 49.7, 44.7 and 34.7 percent of gross wages, paid by the employers, with additional 1 percent (deductible from the personal income tax) paid by employees. The combined corporate tax rate arising from profit tax and municipal tax is 34.5 percent (a reduced 26-percent rate applies to small enterprises). The value added tax rate is 20 percent. Social insurance contributions generate about 8.5 percent of GDP, similarly as the value-added tax. Non-tax-

revenues, such as municipal fees, various levies, and income from rented properties generate additional 6 percent of GDP. Reflecting trade liberalization, excise and custom duties account for less than 5 percent of GDP. Positive institutional developments, such as improvement in tax administration have contributed to stronger revenue performance in most areas.

The structure of government expenditure is rigid. At around 39 percent of GDP in 1999, government expenditures are dominated by social protection programs, debt service, and wages. Pensions and other social outlays account for 13 percent of GDP and wages for over 5 percent of GDP. Interest payments now exceed 5 percent of GDP. Necessary maintenance and operating expenditure are projected at around 5 percent of GDP. This comes up to about 30 percent of GDP, leaving about 7 percent of GDP in total for defense and capital expenditure in 1999.

Experience of the last years has shown that in case of emergency the government avails of instruments for a temporary reduction of spending. The annual budget law provisions impose consistency between spending and revenue flows-- in the course of the year only 90 percent disbursement on expenses is allowed, only if revenues perform as expected, is spending allowed to increase up to 100 percent of the Budget Law. The law also explicitly states the priorities in case of lower than expected revenue flows. While these provisions appear effective to reach deficit targets, expenditure cuts, as a possible response to shocks, or to accommodate higher investment levels will be difficult to make without a thorough and detailed analysis to prioritize expenditure and identify efficiency gains.

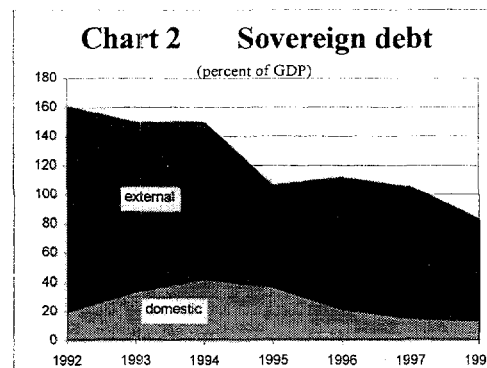
## II. Analysis of Individual Sources of Risk

This section evaluates fiscal risks that emerge in the form of direct and contingent, both explicit and implicit liabilities of the central government. In this context, we define risk broadly, as elements involving uncertain fiscal cost (hence contingent liabilities for instance) and as variability in the effective cost of government obligations and in the associated financial flows.

### 1. Direct explicit Risk

#### *Sovereign debt poses medium-term fiscal risk*

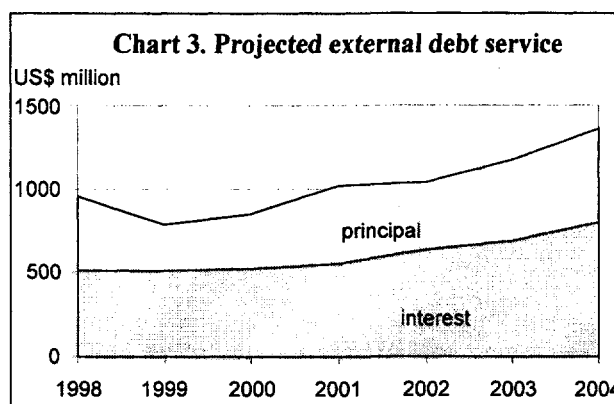
*Trends in government debt appear reassuring.* Until recently, Bulgaria's government debt was a major obstacle to growth and investment. External debt exceeded US\$10 billion, or 57 percent of GDP, in 1990. As the cost of debt service had risen above Bulgaria's perceived capacity to pay, the government announced a unilateral moratorium on debt service payments. In the following years, output collapsed, and sovereign debt to GDP skyrocketed to 150 percent of GDP. Restructuring of debt to the Paris Club in 1992 and London Club in 1994 eased the external debt burden by 33 percent of GDP. Domestic debt, however, had been rising swiftly, as the government borrowed to prepare



state-owned enterprises for privatization, and to bail out failing banks. Bulgaria was unable to access international capital markets, and its official lending has been limited ever since. Striving to return its debt below the Maastricht threshold of 60 percent of GDP, the government generated sizeable primary surpluses of 6.4 percent of GDP annually over 1994-1999, reducing its debt to 82 percent of GDP in 1998 (chart 2). This level on gross basis, as well as 59 percent of GDP on net basis is still among the highest of the EU accession countries.

As Bulgaria had to regularize its relations with its external creditors, it had to cope with a negative transfer of resources, that averaged 5 percent of GDP during 1994-1998. Meanwhile, the budget deficit was financed from domestic sources. Domestic deficit financing averaged 6.7 percent of GDP annually during 1994-1995, peaking at 14.9 percent of GDP in 1996. Investors' confidence eroded quickly, and average maturity of the of Treasury bills collapsed from ten months to mere two weeks at the peak of the crisis.

Introduction of the CBA brought confidence back. The burden of interest payments eased to around 5 percent of GDP, but foreign debt service is projected to remain substantial<sup>6</sup>. In absolute terms it is expected to exceed US\$1 billion in 2001 and stabilize at about 21-22% of exports of goods and services (Chart 3). This level is uncomfortably close to the empirical crisis threshold of 25 percent and will continue to constrain Bulgaria's flexibility in the use of debt financing to dampen fiscal shocks.

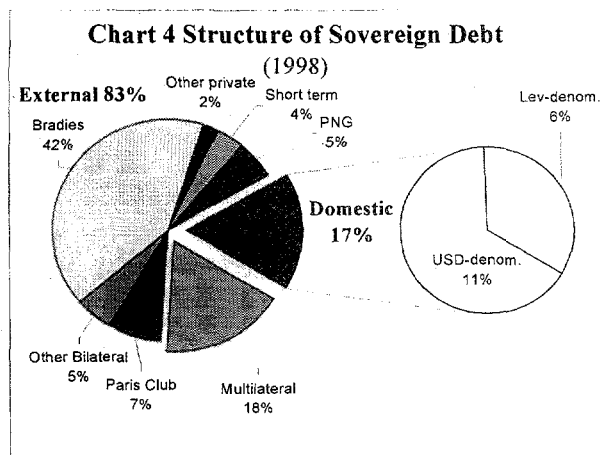


Since the introduction of the CBA, the government has been cautious in its borrowing policies. It prudently refused repeated offers from the commercial creditors in the Eurobond market in 1998. Aftershocks of the Russian and Kosovo crises that have shifted the yield curve substantially upwards in 1999 prove that this prudent stance was well grounded. Net financing from the domestic market has been negative since mid-1998, while the external debt has been reduced by two successful debt buyback operations in 1998-99 at deep discounts. The total face value of debt eliminated via buybacks is estimated at well over US\$1 billion. Bulgaria was rewarded for its responsible borrowing strategy by a 1999 rating upgrade (to B+) and by a steady increase in the average maturity of the Treasury bills from 13 to 21 months as of end-1999.

*Debt structure has stabilized but remains rigid.* The share of foreign debt dropped briefly after the Paris and London Club restructuring deals. Rapid erosion of the value of domestic currency during 1995-1997, however, wiped out the lev-denominated debt and brought the external debt burden back to unsustainable level of 90 percent of GDP. The 1998 share of domestic debt was 17 percent of the total public debt, with about two thirds (mainly associated

<sup>6</sup> Projections include new identified borrowing and gapfill financing. Source: IMF staff estimates.

with the realization of past contingent government liabilities) denominated in the US dollar. The remaining one third of the domestic debt is in Treasury bills (Chart 4). The share of foreign and domestic debt denominated in US dollar is about two thirds of the total debt in 1999. Brady bonds dominate the foreign debt portfolio followed by debt owed to international financial institutions. Most debt instruments have long maturity. Current financing constraint makes it difficult to change the debt structure and improve the risk structure of the debt portfolio.



bonds dominate the foreign debt portfolio followed by debt owed to international financial institutions. Most debt instruments have long maturity. Current financing constraint makes it difficult to change the debt structure and improve the risk structure of the debt portfolio.

*Integrated asset and liability framework reveals substantial exposure to several risks. Integrated asset and liability management seeks to handle in a comprehensive fashion all three main forms*

of market risk facing government: (a) refinancing risk, (b) interest rate risk, and (c) foreign exchange risk. In a financial portfolio approach we compare the risk structures of financial flows and the stocks of financial assets and liabilities on the two sides of the government balance sheet.<sup>7</sup> We define our approach rather narrowly, focusing on government direct debt portfolio and central bank reserves. We do so because the direct debt portfolio is very large compared to contingent liabilities, and central bank and fiscal reserves are large compared to other financial, existing and potential, assets. In addition, we take into account the lev's peg and the country's trade flows since these drive Bulgaria's capital account developments.

We consider *refinancing risk* first. Refinancing risk can be defined as the volatility of a sovereign's access to liquidity and to sources of debt financing over a longer-term period. As the 1997-98 emerging-market crisis illustrated, Bulgaria again may face prohibitively expensive market access in the future. Moreover, Bulgaria's ability to refinance domestic debt is also very limited, since the domestic capital market remains rather shallow.

In this context, we evaluate refinancing risk by the overall maturity of sovereign debt portfolio and by the volatility of its repayment profile. Maturity structure seems reassuring. Brady bonds and debt to international financial institutions mature in 16.5 and 10 years, respectively, bringing thus average foreign debt maturity to above 13 years. The dollar denominated domestic debt is also long-term. Maturity of the outstanding Treasury bills has reached 21 months by end-1999. However, this maturity structure is rigid. Neither restructured

<sup>7</sup> This approach skips over possible valuation changes driven by the exchange rate movements in the government's real assets and liabilities. A *full balance sheet approach*, incorporating real assets and liabilities, is methodologically more attractive, but more difficult to implement. First, there usually exists a large maturity mismatch between the asset and the liability sides, since government's real assets are normally longer-term than its financial liabilities. Second, the usefulness of financial instruments to hedge currency risk in the government's real assets and liabilities is limited since markets to hedge long-term risks are not well developed.



London Club debt nor the debt to international financial institutions can be rolled over. Net Treasury bill financing has been negative since mid-1998, issuance small, and auction placements consistently below offer volumes. In addition, as we will discuss further, a significant amount of Bulgaria's government debt has a floating interest rate and thus makes the repayment profile volatile. Refinancing risks will increase as debt service rises in the medium term.

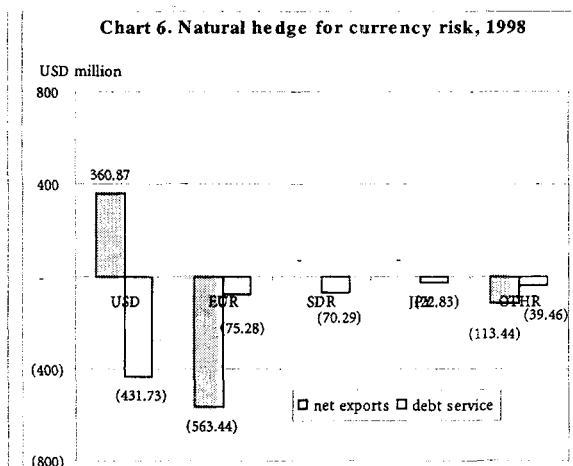
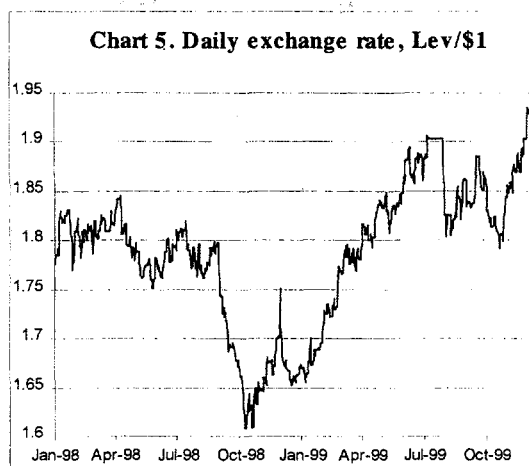
Evaluation of the *currency risk* is simplified under the CBA. The CBA credibility appears strong. Thus we treat the Euro-denominated debt not much different from domestic debt. Bulgaria's cross-currency risk boils down to the US dollar/Euro risk, as the share of other foreign currencies is modest, both for the assets and liabilities. Bulgaria's natural hedges to currency risk in its government debt portfolio include foreign exchange reserves, mainly denominated in the Euro, and current account cash flows, essentially net exports of goods and services, mainly denominated in US dollars, with a deficit emerging in the Euro-denominated trade.

With respect to foreign exchange reserves, we observe a large mismatch between the bias toward the Euro in their structure and the bias toward the US dollar in the structure of Bulgaria's sovereign debt. In stylized terms, we present a simple combined balance sheet of the government and the central bank in table 2.

| Table 2 Simplified balance sheet as of 12/31/ 98   |                 |      |      |     |        |       |              |        |        |
|--|-----------------|------|------|-----|--------|-------|--------------|--------|--------|
| (bill BGL)   | BNB (issue dep) |      |      | MOF |        |       | Net exposure |        |        |
|  | BGL             | USD  | EUR  | BGL | USD    | EUR   | BGL          | USD    | EUR    |
| Currency reserves  |                 | 258  | 4162 |     |        |       | 0            | 258    | 4162   |
| Gov. Account   | -651            | -258 | -103 | 651 | 258    | 103   | 0            | 0      | 0      |
| Gov debt   |                 |      |      |     | -10709 | -1761 | 0            | -10709 | -1761  |
|  | -651            | 0    | 4059 | 651 | -10451 | -1658 | 0            | -10451 | 2400.6 |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Central bank's exposure: euro</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Sovereign debt: US\$</div> </div> |                 |      |      |     |        |       |              |        |        |

Source: World Bank staff estimates

With respect to the current account flows, Bulgaria's large share of foreign and domestic debt denominated in US dollar broadly satisfies general hedging objectives. This holds, even though, the lev is pegged to the Euro, making Bulgaria's exposure to currency risk determined primarily by the US dollar/Euro exchange rate. Indeed, strengthening of the dollar since October 1998 (Chart 5) had so far cost Bulgaria's budget an extra \$80-100 million in debt service cost. In the current account, however, this loss was mirrored by increases in the dollar-denominated export revenues. Chart 6 compares currency composition of net merchandise exports and debt service payments in 1998 and shows that the US dollar exposure on the sovereign debt was broadly matched by the dollar inflows on net exports. The peg to the Euro serves as a natural hedge to Bulgaria's large deficit in Euro-denominated trade.

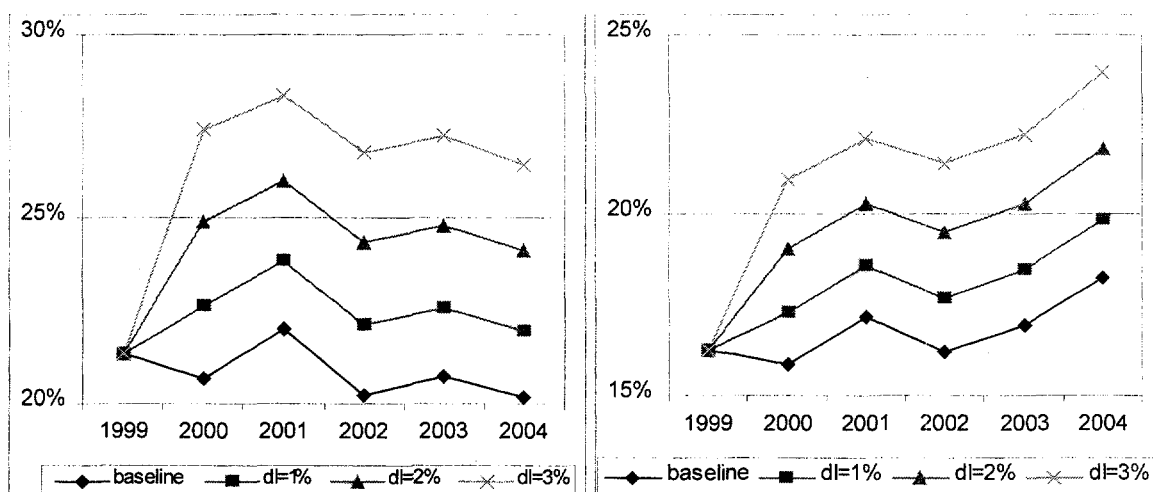


Source: World Bank staff estimates.

The natural hedge on the dollar, however, is not complete and is on the wane. In 1998, the mismatch was some 20 percent of the dollar-denominated exports of US\$70 million; in 1999 it is estimated to over 1/3. Chart 6 excludes dollar exposure on the dollar-denominated domestic debt, which constitutes another 10 percent. And there is a large quarter-on-quarter variance in the currency structure of debt service against foreign trade, exposing the country to short-term currency risk.

*Interest rate risk* in public debt portfolio is a more serious reason for concern. The share of floating rate debt in both external and domestic debt portfolio was over three quarters at end-1998. The drop in LIBOR over 1997-1998 made this to government's advantage, lowering its debt service costs. Possible increases in LIBOR in the future, however, will reverse this trend.

**Chart 7. Stress testing: the impact of higher interest rates on the ratios of...  
debt service-to-exports... and debt service-to-budget revenues**



Source: World Bank staff estimates.

For external debt, the risk of losses on higher interest rates is significant. The relationship between higher interest rates and debt service is exponential, as the interest costs will open wider the financing gap in the future years. Stress testing the debt service profile with an interest rates increase of 1%, 2% and 3% (see chart 7), we find that higher interest rates would result in the debt service to exports ratio to be on average higher than the baseline scenario by 1.5-5.2 percent in 2000-2004<sup>8</sup>. Any increase of international interest rates in excess of 3% over the current levels may lead to unsustainable levels of debt service. The fiscal impact of additional interest payments over 2000-2004 provides more comfort under the baseline scenario which assumes continued strong fiscal performance. Nevertheless, higher international interest rates would add from US\$ 95 million (for a 1 percent increase in interest rates) to US\$ 340 million (for a 3 percent increase) to the annual budget expenditures, or 1.5-6.5 percent increase in a debt service to revenue ratio in 2000-2004.

Domestic interest payments represent the equivalent of a mere quarter of the external debt interest payments, but they are more volatile than the latter. As the domestic fixed income market is shallow, it is extremely sensitive to shocks. In 1999, a combination of factors caused a rise of yields on domestic debt by 4-5 percentage points, while the effective cost of Bulgaria's external debt had risen by less than 1 percent. In a not unlikely scenario, an increase in domestic interest rates in parallel with international rates may raise government debt service costs by 1-2 percent of GDP or 2-6 percent of the 1999 budget revenues. For Bulgaria, the current predominance of instruments with floating rates is thus quite risky. In the short run not much can be done about it, as the government continues with its prudent borrowing policy. Once this policy bears its fruits in terms of improvement in sovereign risk rating and decline in borrowing costs, new borrowing decisions should aim to contain the interest risk in the debt portfolio by contracting debt with fixed interest rates. At that time, a sensible interest-rate benchmark for both external and domestic components of the debt portfolio should be constructed.

*Risk of derivatives*, as volatility in the cost of derivative instruments, is negligible. Similarly to other sovereign borrowers with sub-investment grade ratings, Bulgaria faces difficulties in accessing derivative markets and finding the needed counterparties. Bulgaria would benefit particularly from interest rate swaps and currency swaps to smooth the fiscal impact of exchange and interest rates volatility. But possible availability of derivatives also makes the development and application of asset and liability management framework for risk management more urgent.

*Institutional and transaction risk* refers to possible failures in the debt management processes. Since 1998, Bulgaria has been systematically strengthening its debt management capacities. As one of the steps, the Ministry of Finance has consolidated debt management into a single Department for Government Debt. The department includes specialized units that manage and track debt, guarantees, and on-lending. Bulgarian National Bank (BNB), as the Government's fiscal agent, conducts primary auctions of government securities and aims at

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<sup>8</sup> The baseline scenario is based on the Ministry of Finance assumptions about the future track of international interest rates.

deepening the secondary market. Both the BNB and the Ministry of Finance have been enhancing their debt tracking systems. The BNB debt monitoring system tracks both external and domestic debt, but generates only external debt service projections. Debt database of the Ministry of Finance covers state guarantees as well as the entire government debt, but its projection and reporting engines are under development.

Both institutions lack tools to analyze debt sustainability and to assess risks of their asset and liability portfolios. There exists no structured procedure to assess and compare the risk exposures, and decisions are thus made with little reference to any risk management objectives. For example, servicing the dollar-denominated debt from the Euro or lev accounts alters the net combined exposure of the fiscal authorities and the Bulgarian National Bank, thereby adding to Bulgaria's fiscal vulnerability. As a hurdle in the development of further institutional capacities, both the Ministry of Finance and Bulgarian National Bank suffer from high staff turnover.

The system for transaction processing remains complex, with several overlapping procedures in the Ministry of Finance and the BNB. It has been successful in preventing any payment slippage since 1994, but in some instances, erroneous decisions with regards to accounts and source of funds used for debt servicing have increased debt servicing costs. Streamlining the transaction processing within the overall Treasury management framework is therefore strongly warranted.

### ***The proposed reform would bring social security under control***

Bulgaria's government legally guarantees an old-age pension and other social security programs. Social security guarantees are becoming fiscally expensive. Bulgaria has 2.4 million pensioners and 3.2 million insured in the mandatory social security system. The old dependency ratio, as the share of population aged 60 plus to those between 15-59, has surpassed 0.43. The system dependency ratio, as the share of pensioners to the working population, has exceeded 0.75. Social security programs are exerting increasing pressures on the budget, rising from 9 percent of GDP in 1997 to 13 percent in 1999. Social security programs include: (a) retirement and various social pensions, (b) unemployment and one-off retraining benefits, (c) various social assistance programs for specific groups (students, families with numerous children, and others), and (d) social benefits paid through the municipal budgets, but subsidized from the central budget, for the uninsured and poor.

The government spends 9 percent of GDP on old-age and social pensions. The pension system suffers from arrears in contributions (200 million BGN, which is about 1 percent of GDP, as we will discuss in the enterprise section of this paper) but not from any arrears in benefits payment. With no reform, expected demographic trends threaten to generate cash deficits in the pension system of nearly 2.7 percent of GDP by 2002 (table 3). To contain these expected increases, the government proposes to downsize the existing pay-as-you-go, improve options for voluntary private pension saving, and introduce mandatory defined contribution professional and employer saving plans. Proposed changes into the present pay-as-you-go system include a

gradual increase in the retirement age and its convergence for men and women<sup>9</sup>, transfer of the responsibility for early retirement to professional pension funds, and adoption of universal mandatory pension contributions based on salary levels. On the front of other social security programs, government particularly aims at restricting access to short-term social security payments.

**Table 3 Projected Social Security Expenditures**

|      | Projected pension deficits: w/o reform |          | Projected pension deficits: w/reform |          | Total social security spending w/o reform |          | Total social security Spending w/reform |          |
|------|--|----------|--------------------------------------|----------|---|----------|---|----------|
|      | BGN, <i>mil</i>                        | % of GDP | BGN, <i>mil</i>                      | % of GDP | BGN, <i>mil</i>                           | % of GDP | BGN, <i>mil</i>                         | % of GDP |
| 2000 | 489                                    | 2.1      | 492.9                                | 2.1      | 2081                                      | 8.9      | 2041                                    | 8.7      |
| 2001 | 648                                    | 2.6      | 476.2                                | 1.9      | 2405                                      | 9.5      | 2176                                    | 8.6      |
| 2002 | 744                                    | 2.7      | 524.8                                | 1.9      | 2700                                      | 9.9      | 2408                                    | 8.8      |

Source: NSSI

Under the reform scenario, projections of government pension expenditures look more reassuring, with incurred cash deficits around 2 percent of GDP. Projections shown in table 4 assume the envisaged increases in the retirement age, reductions in pay-as-you-go pension benefits, but also higher compliance, resulting in a cash deficit of around 1 percent of GDP annually, for the next five years.

**Table 4. Projected Public Pension Expenditures After Reform**

| Years | Total Outlays   |          | Annual Cash Deficit/Surplus |          |
|-------|-----------------|----------|-----------------------------|----------|
|       | BGN, <i>mil</i> | % of GDP | BGN, <i>mil</i>             | % of GDP |
| 1999  | 2173            | 9.5      | -114                        | 0.5      |
| 2000  | 2315            | 10.1     | -296                        | 1.3      |
| 2001  | 2432            | 10.0     | -262                        | 1.1      |
| 2002  | 2550            | 9.8      | -240                        | 0.9      |
| 2003  | 2667            | 9.7      | -238                        | 0.9      |
| 2004  | 2743            | 9.4      | -341                        | 1.2      |
| 2005  | 2780            | 9.0      | -261                        | 0.9      |
| 2006  | 2802            | 8.6      | -130                        | 0.4      |
| 2007  | 2798            | 8.2      | 45                          | 0.1      |
| 2008  | 2798            | 7.9      | 169                         | 0.5      |
| 2009  | 2802            | 7.5      | 309                         | 0.8      |
| 2010  | 2848            | 7.4      | 420                         | 1.1      |
| 2011  | 2877            | 7.1      | 796                         | 2.0      |

Source: Agency for Economic Analysis and Forecasting

Hence, according to the above calculations provided by two different sources in Bulgaria, deficit from pension and other social security benefits could range between 1 and 2 percent of GDP per year in the next 12 years. The state has provided no guarantee or commitment under

<sup>9</sup> The present retirement age (55 for women and 60 for men) will be preserved until 2003. After the year 2003, the retirement age for men will grow by 4 months each year until it reaches the age of 65. The retirement age for women will grow by 6 months each year until it reaches the age of 63.

the planned pillar 2 and 3. Therefore, no explicit fiscal liabilities are expected from these programs in future.<sup>10</sup>

***Health financing is likely to grow, either directly or through contingencies***

Similarly to social security, Bulgaria's government also legally guarantees its citizens' access to healthcare. Health care has been available free of charge to the population, costing the government budget around 4 percent of GDP. Since population aging often has a stronger impact on the cost of health care than pensions, the budget may expect increasing pressures. In this respect, health-financing obligation of the state is of direct nature. The government, however, has been considering a reform that would reduce direct budgetary health outlays, but introduce another, contingent portion of public financing in the new health system. Law on Health Insurance, which has established a National Health Insurance Fund to partly cover health care cost, formulates an obligation for the state to cover the Fund's possible future deficits as well as to pay contributions of all of the state employees as their employer. Table 6 shows expected sources of health financing in the reformed system.

**Table 6 Health Fund: Expected Revenues**

|                                | 1999           |                 | 2000           |                 | 2001           |                 |
|--------------------------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
|                                | <i>BGN mil</i> | <i>% of GDP</i> | <i>BGN mil</i> | <i>% of GDP</i> | <i>BGN mil</i> | <i>% of GDP</i> |
| Health insurance contributions | 257            | 1.2             | 577            | 2.4             | 650            | 2.5             |
| o/w from government            | 97             | 0.5             | 213            | 0.9             | 231            | 0.5             |
| State budget                   | 806            | 3.6             | 840            | 4.0             | 1,035          | 4.1             |
| <b>Total</b>                   | <b>1063</b>    | <b>4.8</b>      | <b>1417</b>    | <b>6.4</b>      | <b>1,685</b>   | <b>6.6</b>      |

Source: Ministry of Finance.

Contingent government liability arising from the new arrangement will realize, should the NHIF face difficulties in collecting health contributions. Collection difficulties may arise from the complexity of the Fund's contribution structure. Contributions will be levied on the higher income family member, with additional amounts imposed for dependents and other non-wage earners. The system would require detailed monitoring of family relationships and incomes. Collection and enforcement problems are particularly expected vis-a-vis non-cash compensations and self employed. Furthermore, the Fund is designed to contract health services with health providers. Thus, government's obligation to cover the Fund's deficits is likely to erode incentives in the entire health system and to become costly, also for the state budget. Initially envisaged for mid-1999, actual payments under the new system have been postponed to mid-2000 in view of the above-mentioned implementation problems.

***2. Direct implicit Risks***

***Public Investment Program may generate significant fiscal pressures***

Bulgaria's Public Investment Program, first developed in 1998 for years 1998-2001, offers many positive features but also suffer from weaknesses experienced earlier by other

<sup>10</sup> In the early stages of the new program design, we found it impossible to estimate any possible implicit liabilities that might arise from pillars 2 and 3.

countries. Particularly, Public Investment Program does not include estimates of recurrent and maintenance cost implications of proposed investment programs. This shortcoming may lead to unexpected pressures on the budget in the future and, consequently, to disruptions in further investment programs as well as in the provision of expected services. In addition, risks associated with Bulgaria's investment program are three-fold: (a) project and program quality, (b) availability of expected financing schemes, and (c) counterpart requirements.

Public Investment Program covers planned capital expenditure by the state budget, budgetary spending agencies, large state-owned enterprises, and funds, such as National Environmental Protection Fund, Republican Road Network Fund, National Telecom System, and Air Traffic Management. The PIP is an integral part of the organic budget law of the current year and indicative for the following years. Over the last three years public investment expenditure increased from 1 percent of GDP in 1997 to 3.5 percent in 1999. The Government program for 2000-2006 fixes public investment at 3.5 percent of GDP per year. This limit may come under significant pressures from competing requirements of infrastructure rehabilitation, environmental clean-up, institutional capacity building, restructuring of social services, and poverty alleviation programs, all key to the country's development and growth and/or EU accession.

*Project quality risk* mainly emerges from capacities of the sectoral agencies, which are responsible for economic and financial analysis and for the overall soundness of their proposals. The agencies' capacities, however, vary greatly and most agencies suffer from tight human resource limitations. Similar problems are facing the Ministry of Finance, which is responsible for review and prioritization of proposals prior to submitting them to the Council of Ministers.<sup>11</sup> Thus, project proposals are not necessarily well designed and well assessed. Coupled with the fact that PIP does not include recurrent and maintenance cost implications of investment programs, this may cause that future pressures on the budget exceed expectations.

*Financing risk*, risk that pre-identified sources of financing fall short, is also real. The 1998-2001 PIP envisages a US\$3.9 billion investment program for the public sector. Out of this, US\$2.6 billion belongs to state-owned enterprises. The state is expected to guarantee credits to finance over half of the investments. As we will discuss further, many large state-owned enterprises are incurring losses and accumulating arrears. Unless these enterprises are restructured to become commercially and financially viable entities, state guarantees on their credits may produce significant contingent fiscal risk for future state budgets.

*Counterpart requirements* mainly relate to Bulgaria's investment-related borrowing from International Financial Institutions and EU accession funds. EU programs, such as SAPARD (Special Accession Program for Agriculture and Rural Development), require government to co-

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<sup>11</sup> Selection criteria are established by the Council of Ministers to emphasize: (a) compliance with the governmental development strategy, (b) contribution to economic growth and employment creation, (c) regional, social and ecological priorities, (d) reduction in the amounts of incomplete construction, (e) mobilization of external funds, (f) project readiness, and (g) administrative readiness and implementation capacity. The PIP is now expected to be closely linked with the new, seven-year national strategy.

finance between 25 and 50 percent of investment cost. These requirements do not produce fiscal risk by themselves but require attention in order to have the needed room in future budgets.

### 3. *Contingent explicit risks*

#### *State guarantees are not large but should be treated with caution*

In 1999, Bulgaria has reported about 17 percent of GDP of outstanding state guarantees (table 7). This amount includes 9 percent of GDP of IMF debt that is intermediated by the Bulgarian National Bank. There is no doubt that state budget will cover IMF debt repayment. Thus, in our framework we consider IMF debt as a direct rather than contingent liability of the fiscal authorities, and thus analyzed it as a part of sovereign debt above.

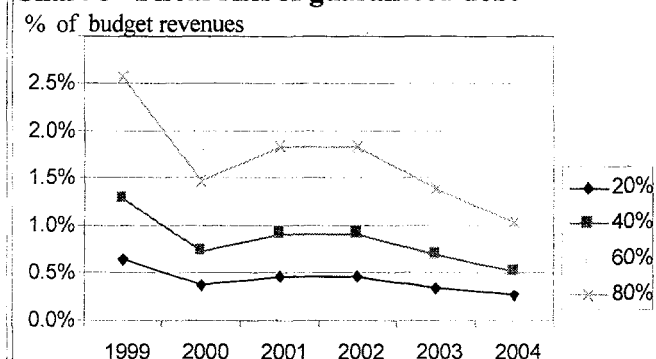
**Table 7 Bulgaria : Publicly Guaranteed Debt Outstanding (end of 1998)**

|                         | Amount | As % of GDP |
|-------------------------|--------|-------------|
| External (US\$ million) | 1596   | 13.0        |
| IMF                     | 1114   | 9.1         |
| Others                  | 482    | 3.9         |
| Domestic ( BGN million) | 840    | 3.9         |

Source: Ministry of Finance and Bulgarian National Bank (Monthly Bulletin, December 1998)

Non-IMF state-guaranteed foreign debt, reaching almost 4 percent of GDP, is dominated by official creditors on the financing side (99 percent) and infrastructure state-owned enterprises (92 percent) as the debtors (see Annex 2). The main source (95 percent) of domestic guarantees are obligations of (that is deposits in) the State Savings Bank. For this Bank, the guarantee fully covers deposits denominated in domestic currency until April 2000. After this date, these deposits become subject to the Deposit Insurance Law, which provides for limited coverage under the Deposit Insurance Fund.

**Chart 8 Fiscal risk of guaranteed debt**



Source: World Bank staff estimates

Excluding the IMF debt and assuming a run on State Savings Bank's deposits before April 2000 unlikely, the amount of outstanding guarantees comes to some 4 percent of GDP. Compared to some other EU accession countries, such as the Czech Republic (Bixi and Ghanem, 1999), this amount is not excessive. But most of these guarantees are risky. Most of the state-owned enterprises, which are their main beneficiaries (covered debtors), have been incurring losses



and accumulating arrears in taxes, social security contributions, and/or wages, and/or to their suppliers.<sup>12</sup> Prior to the end of 1998, 13 domestic and two external guarantees have been called. Expanding our ALM approach to cover contingent liabilities, we mainly observe that enterprise debt covered by state guarantees largely has floating interest rate and is denominated in foreign currency. An increase in interest rates and appreciation of the dollar vis-à-vis the Euro will make the guarantees more likely to be called as well as will raise the budgetary cost of each guarantee called. Chart 8 shows future possible budgetary cost of the outstanding external guarantees (excluding the IMF guaranteed debt) according to different default risk levels. The maturity of enterprise debt is relatively short, thus front-loading the fiscal risk of the existing guarantees. Under a 60-percent default scenario, the fiscal loss would range between 1.2 and 1.4 percent of budget revenues in 2000-2004.<sup>13</sup>

The demand for new guarantees is high emanating both from official donors and the private sector. Box 1, below illustrates the case of the energy sector.

The government has established a simple framework for dealing with guarantees. Particularly the government has developed a comprehensive register of guarantees (placed in the State Audit Office as well as both the Ministry of Finance and Bulgarian National Bank) and introduced regular publishing of the aggregate amounts of guarantees outstanding along with government debt figures. The register covers all external and domestic guarantees, indicating the beneficiary, creditor, project title, amount, currency, and debt repayment schedule. The government also centralized the issuance of new guarantees and subjected each new guarantee to executive and legislative scrutiny associated with regular budget process. Each guarantee request, accompanied by opinion of appropriate line ministries, has to be reviewed by the Ministry of Finance. With opinion of the Ministry of Finance and possible input of the State Audit Office, each guarantee needs an approval by Council of Ministers and Parliament's ratification.

In terms of nominal limits, Decree 482 of 1997 set the annual limit on guarantees (face value) issued at 20 percent of expected budget revenues. A recent amendment to this Decree, however, dropped the complementary ceiling of 20 percent of GDP on the total amount of guaranteed debt outstanding (replacing it with a flexible ceiling to be set in the budget process each year). This change significantly expands the legal room for the government to issue new guarantees. Moreover, relatively lax limits on guarantee amounts are accompanied by flexible reserve requirements. So far, the government has followed prudent reserve policy, though not underpinned by any rules or clear risk assessment practices. The state budget included reserves in the amount of 50 and 20 percent of the total scheduled guaranteed debt repayment (normally to be paid directly by the debtors) in 1998 and 1999, respectively. Furthermore, under guarantee

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<sup>12</sup> Beneficiaries of state guarantees include such continued loss-makers as the Bulgarian Railways, Bourgas Port, and Maritza Iztok mines. Other large loss-makers with obligations covered by the state, such as Zarneni Hrani, are in the process of shutting down.

<sup>13</sup> In Hungary and the Czech Republic, state guarantees covering all risks under the contract have been called with roughly 20 and 40 percent probability.

### **Box 1 Bulgaria: Fiscal risks associated with the energy sector**

Fiscal risks arise on account of state ownership of energy enterprises and the responsibility of the Government to guarantee, either directly or indirectly, the obligations of state-owned enterprises (SOEs). The main sources of existing and expected fiscal risk associated with Bulgaria's energy sector include: (a) non-payment/non-collection for energy services, resulting in accounts payable; (b) inadequate tariffs to cover reasonable supply costs, resulting in the need for direct budget support or a cross-subsidy between consumer groups; (c) non-competitiveness of coal and briquette enterprises, resulting in either direct budget subsidies to mitigate the social impact of mine closures or cross-subsidization by power companies; (d) implicit state guarantees for loans to energy SOEs (owing to state ownership or control of enterprises); (e) explicit state guarantees for loans to energy SOEs; (f) explicit or implicit state guarantees of long-term take-or-pay contracts and other obligations. Fiscal risks associated with (a)-(d) are relatively well understood and addressed. Fiscal risks associated with guarantees to SOEs loans and take or pay contracts are growing rapidly and will be the most challenging to manage and to mitigate. Investment requirements are being driven by EU Accession requirements (nuclear safety, environmental performance, and technical compatibility), external and domestic demand considerations, and reliability and efficiency improvements in existing electricity and heat services to underpin economic growth and social protection.

Fiscal risks associated with (e) and (f) are likely to increase rapidly if investments to modernize energy infrastructure and meet EU Accession requirements are not carefully selected or properly structured. While the Government rightly intends to maximize the use of private capital to minimize fiscal risks, on-going sector restructuring and privatization should ensure that private investors and operators increasingly assume all commercial risks. State guarantees should only be considered for sound projects and where they are needed to secure private financing for projects without which the country's economic growth or social condition would be jeopardized.

With regard to (e), in 1999-2000 state guarantees have been provided or are being considered for investment loans of about \$850 million to be implemented in the 2000-[2004] period. These include investments in nuclear plant safety, waste disposal, and plant upgrade (\$380 million), electricity transmission and dispatch (\$150 million), district heating (\$120 million), and expansion of gas transit capacity to Turkey (\$47 million). The implied level of energy-related guarantees approximates the amount of overall investment guarantees at end 1998.

With regard to (f), an explicit state guarantee has been provided for the gas supply contract between Bulgargaz and Gazprom, signed in May 1998, which requires Bulgaria to take or pay for pre-determined annual volumes of gas until [2010]. The contracted volume for 1999 (4.0 billion cubic meters) is valued at \$320 million. A slightly higher volume is contracted for 2000. The continued decline in demand is likely to result in an obligation to pay against the part of the contracted volume that is not taken.

Implicit or explicit state guarantees are also being considered for long-term take-or-pay power purchase agreements (PPA) between the state-owned National Electricity Company (NEK) and privatized power producers. The first PPA, to support a \$400 million rehabilitation project (840 MW), would impose an obligation on NEK of about \$180 million/year for 15 years in electricity off-take and fuel supply upon completion of the project. Similarly, the second PPA, to support a \$1.0 billion new plant (600 MW) would impose an obligation on NEK of about \$175 million/year for 10-15 years. To the extent possible, these deals should be structured after reforms are more advanced and the investors, not NEK, can take more of the market risk.

contracts the government always covers all risks, without analyzing their determinants, and the full amount of debtor's obligation. Official creditors, providing concessional resources for development projects and balance of payment support, dominate the list of creditors and require full risk coverage by the government. If extended to commercial creditors, this practice has, negative implications for market behavior, creating moral hazard on the side of debtors and creditors. Finally, for guarantees as for debt management, government lacks capacities to analyze and control risk. The capacities to design private-public risk sharing mechanisms are also to be developed at the MOF. Compared with other advanced EU accession countries (see box 2), Bulgaria's problems in managing guarantees appear smaller. As we have noted, however, its need for caution is much greater.

#### **Box 2 Managing contingent liabilities in the Czech Republic**

The management of contingent liabilities in the Czech Republic suffers from two major weaknesses. First, the institutional framework does not encourage adequate prioritization in the use of guarantees. Second, the framework neither encourages pricing of guarantees nor sets sensible nominal limits on their amounts.

First, the law authorizing guarantees contains no guidance on when guarantees are the appropriate public policy instrument or how they should be compared to other forms of state assistance. "This shortcoming has created an incentive for entities and spending ministries unable to secure the desired level of state assistance through the budgetary process to seek state assistance outside of the budget process through loan guarantees. The additional state assistance provided via guarantees is perceived as cost free and is not included in the overall financial support provided to a given sector. ...guarantees are often extended as a result of emergency and political pressure rather than as a result of a strategic decision to support outcomes..."

Second, in the absence of systematic budgeting, one way to contain contingent liabilities is to place limits on their issuance. In the Czech Republic, the sum of expected payments on guaranteed loans in a calendar year is required to be lower than 8 percent of the expected state budget revenues. This limit is too high. In Hungary, the limit is set at 1 percent of the face value of the guaranteed amount.

The Czech system is ahead of systems in other countries in as much as procedures are in place to document the contingent liabilities, to categorize them according to risk categories, and to analyze the government exposure. The payments made under guarantees called are also recorded.

Source: Brixí and Ghanem, 1999, and Brixí, Papp and Schick, 1999.

#### ***Large environment damages need to be financed***

Bulgaria's Environment Protection Law states that the state will not be liable for past environmental damages of enterprises privatized before February 1999. In addition, to comply with EU environment regulations, by 2015 Bulgaria will need to finance large environmental improvements as well as adopt new legislation and institutional arrangements. The Ministry of Environment and Water estimates the 1999-2015 cost of containing past environmental damage and financing the required treatment of water supplies, management and disposal of solid and hazardous wastes, and air clean up to come up to US\$8.5 billion<sup>14</sup>. Assuming equal annual

<sup>14</sup> Assessment for general costs to be incurred in order to reach EU standards in treatment of water supply, management and disposal of solid and hazardous wastes and air pollution clean-up during 1999-2015 prepared by Halgrove Associates funded by EU PHARE. This estimate is the most comprehensive one currently available and covers the overall costs of containment of past environmental damage and implementing programs to attain EU standards for pollution and emission control, including the possibility of closing the old nuclear plants.

amounts, the government will need nearly US\$570 million (about BGN1 billion) annually. The 2000-2006 PIP envisages annual amounts of US\$400 million.

Based on the above overall estimate, the Ministry of Environment and Water and Ministry of Finance have developed a forecast investment program for ecological improvements for 2000-2006<sup>15</sup>. The government estimates the total minimum required expenditures in 2000-06 around USD2.8 billion.

***How large obligations will guaranteed agencies be permitted to accumulate?***

*Business Promotion Bank*, recently established with 95 percent government ownership, is based on a German model and a recipient of a credit line on concessional terms from Germany. Its main objective is to channel long term credit to small and medium size enterprises. The government guarantees repayment of the German credit line as well as other foreign borrowing by the Bank. The government does not guarantee its deposits. The Bank is not operating yet, leaving, for the time being, the risk-exposure of the state near zero.

*Bulgarian Export Insurance Agency* was established in 1998 as a joint stock company, with the Minister of Trade and Tourism representing the Republic of Bulgaria as the major shareholder, to provide exporters with insurance policies to cover political and medium-term commercial risks. The Agency's capital is about DM 10 million. On its own account, the agency will ensure export credits, guarantees and financial losses against short term credit risks. On the government account and with full government guarantee, the agency insures against non-commercial and medium and long-term commercial risk. According to the Export Insurance Law, a limit for the export credit insurance benefiting from Government support should be imposed in the State budget annually. For 1999, the Parliament approved a DM30 million limit. The coverage against short-term commercial risk protects Bulgarian exporters against permanent insolvency and protracted default of the foreign buyer for up to 85 percent of the incurred loss. The coverage against non-commercial risk protects the Bulgarian exporter against default payment by the foreign buyer as a result of war, revolution, host government's moratorium on debt, expropriation, nationalization and similar. The insurance covers no more than 90 percent of the insured loss. The coverage against medium and long term commercial risk protects the Bulgarian exporter against permanent insolvency and protracted default of the foreign buyer, up to 85 percent of the incurred loss. On the government account, the Agency has also started an export credit insurance against short-term non-commercial risk from private and public foreign

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<sup>15</sup> This investment expenditure program covers: (a) support to the municipal water treatment/sewage systems programs; (b) past environmental damage containment expenses for 'large polluters' in mining and metallurgy, chemicals and petrochemicals, oil refining and petroleum distribution that will be privatized; (c) support for the disposal of solid waste programs for the municipalities; (d) disposal of hazardous waste programs for closed mines; (e) rectifying the hazardous sulfur emission from thermal power plants; (f) past environmental damage containment investments for the non-privatized ore mines(coal) and liquidated/closed entities; and, (g) some estimates for compensating the land-owners for recultivation of the contaminated land around the industrial sites. It does not cover the disposal of solid waste from closed uranium mines, phasing out the old nuclear plant, and conversion of thermal power plant inputs from lignite to better quality coal.

buyer. Demand for this as well as other policies is, however, still very limited, keeping the state's risk exposure very low.

*State Fund for Agriculture*, under the Ministry of Agriculture and with its obligations explicitly guaranteed by the state, provides financial support to the agricultural sector through short and long term loans, credit lines, interest subsidies and guarantees. Credit lines channeled through commercial banks support long-term agricultural investment. The number of commercial banks participating in this program has increased from 2 in 1998 to 11 in 1999. Through an irrevocable order of payments issued by the commercial banks in favor of the Fund, credit risk appears fully assumed by the banks. The State Fund for Agriculture charges the commercial bank a 2 percent interest rate, the banks charge the producers 6 percent, and the remaining 4 percent cover the bank's margin. In the context of market interest rates, the implicit subsidy to the producer is about 10 percent of the credit amount outstanding annually. This program is growing rapidly from 150 projects approved for BGN 11 million in 1998, to 350 projects and BGN 24 million credit in mid 1999. In addition to yearly allocation from the state budget, this program is supported by a revolving fund financed from repayments by the commercial banks. Direct support to agriculture producers is also provided through interest subsidy and short-term credit. Support under these programs amounted to BGN 46 million in 1998 and was scaled down to BGN 35 million in 1999. These programs are being phased out and expected to disappear by 2001.<sup>16</sup>

While the short term support programs are subject to a yearly limit in the budget law, no ceiling is imposed on the volume of long-term investment credit. In addition, a new instrument is being introduced whereby commercial banks would extend long-term credit from their own resources with a full guarantee of the State Agricultural Fund. It is unclear whether the Fund's guarantees are subject to any specific limit. Finally, under the Grain Law, public warehouses will be established and warehouse receipts could be pledged as collateral for commercial bank credit. The State Fund for Agriculture is expected to participate to this scheme through provision of guarantee or participation in an indemnity fund.

#### ***4. Contingent implicit risks***

##### ***Enterprise obligations may turn out expensive***

Enterprise restructuring has been slow in Bulgaria, and state-owned enterprises have been accumulating losses and arrears. In 1999, arrears reached nearly 2 billion lev (around 8.5 percent of GDP), concentrated primarily in about 90 largest enterprises. These include the Bulgarian Railways, Bulgargaz (energy) and Neftochim (chemicals). Out of the total amount, about one half are due in taxes and social security contributions and have led in the past to shortfalls in tax and social security revenues. The other half is largely due to suppliers (mainly energy state-owned enterprises), leaving around 2.3 percent in wages due to employees.

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<sup>16</sup> The Fund's revenue base consists of allocations from state budget and of fees from leased state properties. A 2-percent levy recently introduced on the turnover of agro-processing companies is subject to cancellation in December 1999 under the government program supported by the IMF-EFF.

Future possible clean up of these obligations may negatively affect the budget as far as the arrears to suppliers and enterprise employees go. Should the government be liable for tax and social security contribution arrears, their payment from the budget would be an accounting procedure of no consequence for the fiscal balance. In order to break the inter-enterprise chain of arrears leading to accumulation of tax arrears, the government is implementing a strategy to recapitalize enterprises and thus enable them to pay suppliers (typically the gas and energy public monopolies), who would in turn pay tax and social contributions arrears to the budget. In order to limit moral hazard, this operation is available as a once-off option at the time of privatization. Without hard budget constraint, however, future problems in collecting taxes and social contributions from enterprises would translate in revenue shortfalls and affect government's fiscal position

### *An implicit fiscal pressure from municipalities?*

Municipal borrowing is subject to a legal limit of 10 percent of their annual revenues. Out of this amount, as much as 10 percent of the preceding month's revenues can be in the form of a short-term interest-rate free credit from the central budget. Municipalities are allowed to seek the remaining credit from commercial banks and from other municipalities. For this credit, municipalities can request state guarantee. Furthermore, subject to further market development and to the approval by the Securities and Exchange Commission, municipalities will be able to issue bonds. Sofia already successfully issued bonds in Luxembourg for 50 million Euro. The existing law is not clear whether bond debt is subject to the overall indebtedness rules. As experience in many south American countries, including Argentina, Brazil, and Mexico has illustrated, markets often perceive municipal bonds as implicitly (even when clearly not explicitly) guaranteed by the state<sup>17</sup>. Possible increases in municipal credit in any form may thus bring about strong pressure on the fiscal authorities in case of default. The government is closing some of these loopholes in the 2000 budget law.

Fiscal risk for the central government may also emerge from municipal guarantees and other contingent municipal obligations. These are not currently regulated under any existing law. Thus, municipalities face no ceiling on the number and overall value of guarantees they can issue. Further risk of a financial pressure to spill over from municipalities to the central government relate to the municipal ownership of loss-making and indebted enterprises and financial institutions. The spill-over mechanism is likely to be the stronger, the more municipalities become responsible for the provision of core public services. Central government may find it plausible to let a municipality default on its debt to commercial banks. Possible subsequent failure of the municipality to deliver such core services as running water and schooling may be, however, politically too sensitive to let the central government abstain from "emergency" financial support. On the positive side, the State Audit Office is authorized and active in screening municipal performance and financial management. The cost of nuclear safety is not yet fully known.

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<sup>17</sup> Dillinger and Webb, 1998.

Major government financing may be required by Bulgaria's nuclear power program. The Kozloduy nuclear power plant site has 2 units of 1000 MW each and 4 units of 440 MW each. International observers have declared the 2 large units in compliance with environmental damage containment measures. The other 4, older, units are determined by the European Commission for an early closure, on the basis of a Nuclear Safety Account Agreement. The cost of decommissioning of the power plant has not been taken into account in the past (for example, depreciation costs have not been integrated into the energy prices). Bulgaria's government, while implementing short-term safety program, indicated in the context of EU accession discussions, its preparedness to implement the decommissioning in two steps, closing down 2 units by 2003 and the other 2 before 2008, possibly by 2006.<sup>18</sup>

***Fiscal risk from the financial sector is currently low***

Bulgarian bankers, regulators and depositors were badly burnt by the experience of 1996-97. Their response has been one of caution. This limits the fiscal risk that needs to be accounted for. *Risks from the past* mainly relate to possible ongoing fiscal risk of past bank failures. In practice, high inflation has eroded much of the continuing claims on banks in liquidation. Recoveries from these liquidations are expected low but still uncertain. Bulgarian National Bank indicates that government claims on past failed banks amount to 400 million lev.<sup>19</sup> Remaining non-government deposit claims total about BGN 160 million. The government rules out any further compensation of non-government claims (of which 50 percent were compensated). Unrecoverable claims by state-owned banks, including State Savings Bank, on the liquidated banks have already been fully provisioned. The privatization of the remaining four banks might realize less funds than had been originally hoped. But further government injections needed are unlikely to exceed BGN 100 million.

*Risks from the current situation* reflect several factors. One very short-term potential risk is liquidity risk that lies in the decision to transfer accounts of the central budgetary and extra-budgetary funds, which are currently held by banks, to the government single treasury account held by the central bank. This transfer will not change the overall liquidity of the total banking system. However, transferring the accounts with all their deposits, estimated at 400 million lev, will require individual banks to liquidate some of their asset portfolios (that is their holdings of T-Bills, foreign exchange placements with overseas banks, and similar). The selection of assets to liquidate and conversion of remaining assets by banks may, however, cause temporary lack of liquidity in the money markets. This problem appeared in the early 1999 when around BGN 80

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<sup>18</sup> Discussions on the timetable are still underway and exact costs of decommissioning, future demand and capacities remaining after the closing of the old nuclear units not yet fully worked out. Similarly, subsequent price, income and substitution effects on the household and enterprise sectors have not been analyzed. Therefore, no firm estimates of new investment, if needed, to meet electricity demand are available.

<sup>19</sup> Government expects several payments from the liquidations. If transferred to the Government's account at the BNB and sterilized in the normal way, as provided for in the currency board arrangements, this could have the unintended effect of tightening liquidity. While this is a monetary policy issue, and as such outside the scope of our paper, any special arrangements adopted to deal with it, such as special deposits retained by Government in commercial banks, could conceivably present a longer-term fiscal risk.



million of funds collected from the proceeds of asset sales of banks under liquidation was transferred to the account of the Ministry of Finance.

More generally, the major banking system risks are typically to be found in loan portfolio weakness, interest rate or exchange rate risk, liquidity risk, or in self-dealing or fraud. Past loan-portfolio weaknesses have been flushed out by the crisis of 1996-97, and indeed the real value of any non-performing loans at that time has been substantially eroded. The major state-owned banks have since been under a privatization scrutiny, which has limited their appetite for any risky lending, and this process also gives some increased confidence in the reliability of the accounts and the classification of loans for most of these banks. Many of the second tier of banks have received foreign capital accompanied by a degree of diligence. Therefore, the true aggregate capital position of the banks is likely to be fairly close to what they report. That means that aggregate compliance with capital standards is good, and that no immediate threat to the limited resources of the deposit insurance fund exists, unless external conditions change.

Concerning the obligations of Deposit Insurance Fund, from January 1999, the blanket deposit insurance, introduced during the crisis, was replaced by a new Deposit Insurance Fund. The fund collects, relatively high by international standards, a levy of 0.5 percent on end-year deposits of the banking system, and covers 95% of the first BGN 2,000 of any deposit, and 80% of the remainder up to a maximum payoff of BGN 6,900.<sup>20</sup> No estimate is currently available of what the average percentage payoff from the actual distribution of deposits would be. The figure is likely to be as low as 40 percent or even less.<sup>21</sup>

Despite a payoff of about BGN 10 million in January 1999 (see below) the Deposit Insurance Fund still has assets of about BGN 30 million (inclusive of an endowment of BGN 17 million). Failing other calls on its resources, it will accumulate funds at a rate approaching BGN 25 million per annum at the current insurance levy rate. The Banking Department deposits at the Issue Department<sup>22</sup> are explicitly defined as the resources available for the lender of last resort facility in case of a systemic crisis in the banking sector. In 1999, these funds have covered nearly 20 percent of total deposits net of settlement accounts and thus have provided additional cushion to the Deposit Insurance Fund. The Fund also has the authority to increase this rate up to 1.5 percent of end-of-year deposits. If still inadequate, subject to parliamentary approval, the

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<sup>20</sup> Interestingly, this insurance cover differs from a common-sense reading of the relevant legislation, which would have limited the payout to BGN 4300. However, the drafting contained an ambiguity, and the higher amount was paid in the case of the Credit Bank which had to be dealt with only days after the new scheme came into effect.

<sup>21</sup> On the other hand, if closure was preceded by a lengthy period of suspicion, experience elsewhere shows that uninsured depositors would likely withdraw their deposits before failure, leaving the bank with a higher share of insured deposits.

<sup>22</sup> The Issue Department and the Banking Department are the two principal financial departments within the Bulgaria National Bank, following the model of the Bank of England. The Issue Department holds all of the BNB's monetary liabilities and invests the BNB's foreign assets subject to restrictions in terms of quality and liquidity explicitly stated in the law on the BNB. The Banking Department is responsible for enforcing reserve requirements, monitoring financial markets and the payment system.



Fund can obtain credit from the government. In the context of a wider possible "too big to fail" policy, this recourse to the government allows bank failure to present a fiscal risk.

Because of the relatively intense scrutiny of the larger banks, the likelihood of significant self-dealing or fraud is limited. There is no reported evidence of malpractice in the smaller banks either, and these are supervised by the central bank. The re-licensing process for insurance has sharply reduced the potential for abuse in that sector.

Less is known about the business of finance houses, which enjoy very light prudential regulation and supervision. By far the largest of these has a balance sheet of the order of BGN 100 million and a very small capital base. Whatever the risks being faced by the investors (whoever they may be) in such companies, it is unlikely that the fiscal authorities would meet any deficiency here, so the fiscal risk remains small.

Banks' exposure to external risks entails three standard risks: (a) economic downturn, (b) sharp and sustained interest rate movement, and (c) exchange rate change. Ideally, a systematic stress test would be carried out on each bank's portfolio to assess the impact of substantial adverse developments on all of these fronts. Even without the data to conduct such an analysis, preliminary broad estimates can give an indication of the broad magnitude of risks here. Deriving these estimates, we treat the risks one-by-one, though they could be correlated.

The risk of a sharp economic downturn that would affect loan recovery mainly correlates with such events as Kosovo crisis or as deterioration of competitiveness of Bulgaria's enterprises. Most of the Bulgarian banks have sufficient capital to absorb even a substantial increase in loan-losses. The aggregate of capital and reserves in the banking system comes to almost 60 percent of the net loan portfolio, and (with the exception of the SSB), each of the large banks has sufficient capital to absorb the total loss of as much as one-third of its portfolio without insolvency. Further calculations will refine the picture, but it appears that, despite the limited resources of the Deposit Insurance Fund, the banking system might not impose severe direct fiscal costs arising from a major economic downturn.

Interest rate risk is negligible for most domestic banks because nearly all loans and deposits are subject to repricing on a monthly basis. To the extent that banks are trying to profit from the upward-sloping yield curve in foreign investments (as some are allegedly doing) there could be a risk. However, these positions are typically in major currencies such as dollar or euro, where interest rate volatility is not very great. Such positions would therefore present a risk to bank profitability, but are most unlikely to be large enough to knock-on to the state budget.

Foreign exchange exposure may be a more significant issue. There are three aspects to this. First the exposure of dollar against euro. This is strictly limited by regulation for banks. But it could be a problem for Bulgarian borrowers, whose receivables are in euro, but whose loans are denominated in US dollars. The existence of such cross-currency risk is generally acknowledged, and banks find themselves in need for greater hedging. The second foreign exchange risk relates to open positions in lev against euro. Overall, the banks are considered long in Euro but a precise quantification is not available. Such positions are not restricted by-

regulation, the argument being that the currency board eliminates all such risk. Of course, a stress-test needs to take account of even highly unlikely events. Experience from other countries shows it is exactly when a fixed peg comes under extreme pressure that large open positions emerge. Should lev interest rates rise as a result of pressure on the currency board, local banks (following the example of Mexico, among other countries) might use their freedom to take a large long positions in lev to profit from the high local interest rates. Were the currency board subsequently to fail, this could result in widespread bank insolvency and a major fiscal risk.

*Risks from the future* are limited if government continues in tightening prudential regulations, supervision and supervisory practice for banks and non-banking financial institutions, streamlining the institutional structure for regulation of pension funds, finance houses and mutual funds and improving effective implementation of bankruptcy procedures. Without continuous regulatory vigilance, a risk may arise from the excessive bank capacity relatively to the current and prospective market opportunities in Bulgaria. As present behavior would suggest, environment of low profitability may result in orderly exit of the least viable. But international experience shows that it can also encourage reckless behavior as bank owners or bank management "go for broke" when failure or exit is otherwise inevitable. Finally, the currency board arrangement may generate a risk in the long term if it is not supported by adequate fiscal, income and structural policies.

### **III. Developing Fiscal Risk Management Framework**

#### ***1. Individual measures to address selected fiscal risks***

In this section, we develop an action plan with measures to reduce the government's exposure to fiscal risks. We place emphasis on public finance institutional arrangements and capacities rather than on structural policies.

#### ***Priorities for the short term***

*Continue cautious borrowing strategy, adjusting it to risk management objectives.* Given Bulgaria's vulnerability to shocks, policy makers need to acknowledge the need to minimize volatility in government financing and in debt service cost. By definition, a low- risk borrowing strategy may be costlier than an adventurous one. As the country rebuilds its creditworthiness, it will become increasingly able to manage short-term external shocks and to reduce the effective cost of its debt portfolio.

A strategy of low risk would imply the need to adjust the government debt structure as well as to strictly limit contingent liabilities (see below). The government will need to conduct a detailed analysis of the structure of both relevant assets and liabilities and construct a benchmark to outline an optimal debt portfolio. Through possible buy-backs and through new borrowing on as needed basis the debt management office then can gradually adjust the sovereign debt structure in the appropriate direction. Our brief analysis suggests that this direction is likely to point toward the lev- and Euro-denominated, long-term, fixed-interest rate debt instruments. This approach would result in a costlier, but low-volatility portfolio.

While considering any new borrowing operation, Bulgaria will need to take into account the risk structure of its outstanding debt portfolio. This approach is particularly valuable for heavily indebted borrowers, since its access to market-based tools is limited, principally because of its credit rating. For example, of particular relevance for Bulgaria is the World Bank's new loan product -- a fixed-spread loan, that has an interest rate based on LIBOR, plus a spread that can be fixed for the life of the loan. The product allows the borrowers to flexibly fix the interest rate on disbursed amounts at any time during the life of the loan; to cap or collar it; to unfix or refix the rate on disbursed amounts; and to change the currency and loan repayment terms, within financial policy limits. This new product offers Bulgaria an attractive opportunity to increase the flexibility of the government borrowing policy while keeping its low-risk profile. For example, it may consider fixing the maturity of a new loan from the World Bank in such a way that it would smooth the uneven debt servicing profile in the years ahead; or, balance the currency structure of its outstanding obligations with the currency structure of its exports.

Additional opportunities to mitigate risks in the government asset/liability portfolio are provided by the World Bank hedging products such as interest rate swaps, caps and collars; currency swaps; and commodity swaps. Again, tapping international derivatives' markets may be prohibitively costly for Bulgaria at its level of creditworthiness. The Bank's hedging products will only be available to transform the risk structure of Bulgaria's debts to the World Bank. This innovation is significant both because the bank's share of Bulgaria's overall portfolio is substantial (and reducing the risk exposure on it would contribute to the broader risk containment strategy of the government); and because the sovereign borrower would thus gain experience that may later be applied in the international derivatives' markets.

On the other side, Bulgaria's return to the international capital markets may still be premature. An early debut in the capital markets is unlikely to contribute to the reduction of the effective cost of external debt and may (due to Bulgaria's low rating) even exacerbate the refinancing risk. On the contrary, another two years of strong fiscal performance and rigorous debt servicing are bound to further improve the country's sovereign rating and to reduce the cost of new financing. Meanwhile, further debt buyback operations, similar to the buybacks executed in 1999, may shave some percentage points off Bulgaria's public debt burden. This will give it larger windows of opportunity for more proactive debt management and borrowing policies years ahead.

*Define strict limits for and build reserves to cover obligations guaranteed by the government.* Vulnerability to fiscal risks and of the EU accession objective require Bulgaria to implement a tight limit on the amounts of newly issued and outstanding obligations under state guarantees. Ideally, this limit would fully reflect government budgetary constraints. For example, assuming a 30-percent default risk, the government would immediately set aside 30 percent of face value of new guaranteed obligations to build its contingency reserve fund possibly within the Fiscal Reserve Account. This fund would maintain reserves across fiscal years (rather than being a simple budget allocation that disappears unless utilized in a given fiscal year). Ceilings, reserve requirements, and an imperative to prioritize should apply to all sources of explicitly guaranteed debt, encompassing obligations of all agencies, including Export

Insurance Agency, Business Promotion Bank and State Fund for Agriculture, that are backed by the government.

*Analyze and regularly report fiscal risks.* Require that analysis of fiscal risks be added to government fiscal reports. Regular reports should show debt scenarios (ideally in net present, mark-to-market value as well as on annual, cash basis), discuss the potential future fiscal impact of contingent liabilities and tax exemptions. These reports would form a basis for reassessing government borrowing and risk management strategies.

### ***Priorities for the medium term***

*Close loopholes, require due diligence, monitor all sources of fiscal risk, and prepare contingency plans.* Legal status and regulatory framework applying to public sector institutions, municipalities, and agencies, backed by the state, need to cover all possible sources of their financial risk to be effective in preventing possible spill-over on the central government. For example, the budget law should close any remaining loophole allowing the municipalities to issue guarantees and take on other contingent obligations, such as municipal insurance programs or issuing municipal bonds outside the overall limits on indebtedness and guarantees. Furthermore, all programs and agencies explicitly or implicitly associated with the state, should be subjected to tight reporting requirements and supervision. Supervision as well as their design and legal status need to ensure that their performance (including maintenance and investment) and financial management will not create fiscal pressure on the government in the future. To enhance its monitoring, the government should include all sources of possible obligations in its registers of contingent liabilities. While implicit contingent obligations may remain confidential, the government needs to understand their size and determinants and prepare adequate contingency plans for how to face possible pressures in advance.<sup>23</sup>

*In the Public Investment Program, incorporate investments associated with EU accession and reflect on the recurrent cost of all proposed investments.* Bringing all investments into the Investment Program and incorporating recurrent cost into investment decisions is crucial to a good fiscal performance in the future. Eventually, a medium-term fiscal framework should replace the Public Investment Program and ensure that future investment and recurrent costs correctly show in the medium-term fiscal planning.

*Designate risk management responsibilities and build risk management capacities.* To optimize government liability portfolio so that it is consistent with government risk management objectives, to design programs of contingent support (such as guarantee contracts) in a way to minimize moral hazard in the markets and future fiscal cost, to assess adequate reserve requirements so that they provide the needed cushion but without entailing unnecessary opportunity cost, and to benefit from sophisticated hedging instruments and derivative markets, the government needs to clearly outline risk management responsibilities of its agencies and support their capacity building. This is not an easy task but experience of countries like Ireland,

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<sup>23</sup> For background on how to deal with implicit contingent liabilities see Schick, 1999, Polackova, 1998, and, with respect to the financial sector, Honohan, 1999.

the Netherlands and Sweden offers useful lessons. Meanwhile, new risk-hedging products of the World Bank allow Bulgaria to reduce risk exposure, particularly the government's significant exposure to interest rate risk, with minimal counterpart risk, and to gain needed experience in using more complex derivative instruments.

## **2. A better framework for fiscal management**

In this section, we outline a possible development of the overall public finance institutional framework in Bulgaria to better capture fiscal risks. This framework aims at promoting government fiscal performance across all types of government fiscal activities and with respect to all sources of fiscal risks as well as to the budget. One of the specific goals for the new framework is to promote risk-awareness culture in government. Below, we summarize the key features of the new institutional framework.<sup>24</sup>

*Monitor and report.* Statements of contingent liabilities, tax expenditures and other fiscal risks should list the various sources of fiscal risk, discuss their nature and sensitivities, implications on future fiscal position and equity, and where applicable provide their face and/or estimated value.<sup>25</sup> Good practice is offered by Australia, Canada, Colombia, Netherlands, New Zealand, and the United States. Budget documents of these countries stress-test the fiscal baseline with respect to major macroeconomic, policy and demographic risks. Since risk exposures change with time, as underlying conditions evolve, government should reassess assumptions that underlie its risk analysis several times a year and adjust its reserves.

To prevent spill-over of risks held by various agencies, such as subnational governments and other public entities, state-guaranteed funds, state-owned enterprises, and large financial institutions and banks, it is critical for the government to enforce transparency in the markets. In addition, government needs capacity to monitor and analyze its risk exposure vis-à-vis these implicit sources of fiscal risk. As a part of monitoring its risk exposures, government more than risk managers in the private sector needs to monitor behavioral determinants of fiscal risks. These include performance (moral hazard) under its guarantee contracts, legality of claims against tax duties, and performance of subnational governments or other entities that may affect future government fiscal position.

*Adjust medium-term fiscal strategy to risks.* Government medium-term fiscal strategy is hardly viable if it does not reflect implications of fiscal risks. The best way to show medium-term implications of fiscal risks for the overall fiscal position, is to develop baseline medium-term cash projections and stress-test these projections with respect to specific determinants risks (ideally, taking into account any existing correlations). Results of stress-testing will be critical

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<sup>24</sup> For a more comprehensive list of measures and questions associated with the management of fiscal risks, see Annex 3.

<sup>25</sup> Since no cash is spent from the budget when governments assumes a contingent obligation or provides a tax exemption, cash-based accounting systems fail to detect such fiscal risks. But a full accrual-based accounting system is neither necessary nor sufficient as a remedy. International accounting standards, for instance, require only *probable* contingent liabilities (contingencies with relatively high probability of realization) to be included in the balance sheet, leaving the others in a separate statement of contingent liabilities.

for government to re-estimate periodically the sensitivities of its risk exposure with respect to changes in the underlying assumptions and to decide on reserve and hedging strategies accordingly. For implicit risks, medium-term fiscal strategy should be accompanied by confidential contingency plans on how to proceed when implicit and indirect risks materialize.

Similarly, equity and efficiency considerations are relevant only if they address the whole range of fiscal activities and their future likely costs. The budget law should require that guarantees and other promises of contingent government support be subject to the same scrutiny as budgetary programs.

*Create accountability for risk analysis and management.* To ensure that policy makers adequately reflect fiscal risks in their fiscal plans, they must become accountable for their analysis and assumptions. Therefore, supreme audit institutions and budget reports should comment on, and evaluate ex post, government risk analysis and risk management.

*Share risk.* To create proper incentives for the borrower, lender, and program manager under programs of government contingent support, the budget law should demand a significant amount of risk to be shared by these parties. The budget law may advise that state guarantees will not cover either the full credit/obligations or risks that are under control of the borrower and lender, such as specific commercial risks.

*Make provisions and account for fiscal risk* Budgeting and provisioning for fiscal risk has three main objectives: First, draw more attention to risk analysis, and thus build risk awareness of policy makers and the public. In this context, the process of risk analysis is often more important than the actual end estimate of government risk exposure. Second, make policy-makers cash neutral, that is neutral between alternative forms of providing government support from the viewpoint of deficit measurement and sectoral budgetary envelopes. Third, particularly important for governments with a limited access to debt markets, create a buffer for the event that risks materialize.

Allen Schick, 1999 has summarized the contemporary approaches to meet the above objectives in the following principles<sup>26</sup>:

- Apply joint ceiling for the cost of budgetary and off-budget support for each sector in a fiscal year. Off-budget support is a form of subsidy, which should be considered along

#### Box 3 Private Sector Logic on Provisioning

The private sector offer examples, why to provision fully for the expected cost of contingent support immediately in the year the program is issued. Programs of contingent support can be often shown as a put option written (given) by the government. In the private sector, financial institution charges full option price when writing (selling) an option. Price of an option reflects the present value of the future possible loss, which may be incurred by the underwriting institution. As illustrated by the Black-Scholes formula, the price increases with the time to expiry (e.g., maturity of the guaranteed loan) and with the volatility of the underlying asset (e.g., share price of the enterprise the debt of which is under the guarantee). Financial institutions charge the full option price immediately at time of selling the option. The amount is then used either to build reserves or to buy a hedge. See Hull, 1997.

<sup>26</sup> For suggestions in a country-context see Brixí, Ghanem and Islam, 1999, Mody 1999, and Brixí, Papp and Schick, 1999.

other forms of government support for each sector.

- Calculate the cost of off-budget support as the present value of the future expected fiscal cost.<sup>27</sup>
- Reflect the cost of off-budget support in full in the year when it is issued (see box 3).
- Transfer an amount equal to the cost of off-budget support from the budgetary envelope of the related sector to a central contingency reserve fund.

These principles pull the expected fiscal cost of off-budget support into deficit accounting in the year when the programs are launched. The amount transferred to the reserve fund is accounted for like an expense. On the other hand, when contingent claims are paid out from the reserve fund, fiscal deficit remains unaffected. Implementation of the Federal Credit Reform Act in the US has confirmed that this approach is plausible even when accounting and budgeting systems are not fully on an accrual basis.

*Utilize asset liability management strategy to neuter fiscal risks.* An integrated approach government assets and liabilities (particularly to borrowing, debt management and to the management of reserves) allows to find natural hedges to fiscal risks and thus reduces the contingency reserve requirement and the need of derivative instruments. Particularly if facing constraints in the choice of available risk management tools, the government needs to decide on its new borrowing and on rebalancing the portfolio of outstanding liabilities in the context broader challenges posed by the structure of its assets, future revenue streams, and contingent and implicit liabilities.

*Assign risk management functions and build capacities.* For risk management as well as for conventional budget management, control structures and accountability are crucial. Important features to improve control and reduce scope for fraud and corruption include centralization of risk-taking authority and division of risk management responsibilities (see box 4). For government risk management, crucial authority and responsibilities are likely to be best placed at the Ministry of Finance, particularly in its departments managing debt and budget. Their functions, as well as government risk management strategy should, however, reflect the level of their financial and risk management capacities. And country experience has indicated that a lot of attention (including, for instance, aggressive hiring approaches and independent, market-based salary scales) is needed to develop and retain such capacities in the public sector.

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<sup>27</sup> There may be a discount applied on a newly proposed policy (say drought insurance) if its risks are negatively correlated with the risks of other policies (say, minimum agricultural price guarantee and flood insurance). This is because in such a case the newly proposed policy would increase government overall risk exposure by less than its full expected cost.

**Box 4 Division of Responsibilities**

Large banks, including JP Morgan and Deutsche Bank, have divided the functions of designing and authorizing new transactions, analysis, and record keeping among three different offices. The front office centralizes designing of financial instruments and has the exclusive authority to enter into new derivative and debt transactions. Its objective is to ensure required levels of available cash and optimize overall return-risk ratio. Middle-office provides analysis of future obligations and payoffs, and their sensitivities for the entire portfolio. Finally, back-office is responsible for record keeping and maintaining comprehensive databases.

Maintaining these functions independent of each other improves transparency and control of portfolio risks, and it prevents the front office from exceeding their predetermined risk exposure limits.

Governments of Ireland and Sweden, among others, have successfully applied such division of responsibilities in their debt management. Many governments have successfully centralized the authority to issue debt, guarantees, tax exemptions, and other off-budget programs. Further, they should now expand the scope of risk management and adjust organizational structures and responsibilities accordingly. See Nars, 1997.

## IV. Conclusions

Bulgaria's current fiscal position is strong. The CBA has been effective in imposing fiscal discipline, but it leaves limited room for accommodating potential risks. Significant pressures could arise from increases in international interest rates, from environmental liabilities and investment requirements, and from failure to strengthen the collection capacities of the social protection institutions and to establish adequate fiscal risk monitoring. Our analysis demonstrates the importance of limiting future exposure of the government of Bulgaria to risks while accommodating investment needs, crucial to growth and development. For this, Bulgaria needs to find an optimal mix of debt management, fiscal reserves and risk mitigation strategies.

Specifically, there are several steps for the government to follow in dealing with the existing risks and to constrain the scope for further accumulation of risks. In this context, priorities include mitigating currency and interest-rate risks in the government liability structure, implementing of the envisaged institutional and financing reforms of the pension and health systems, building adequate contingency reserves, introducing risk-sharing arrangements, prioritizing and placing strict limits on the amounts of new guaranteed obligations, and developing government capacities to analyze and manage risk. Fiscal risks should become fully integrated with government policy considerations, in the process of fiscal management, and in an integrated asset and liability management strategy.



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Table on Bulgaria General Government, 1994-2002

|  | 1995  | 1996   | 1997  | 1998  | 1999               | 2000               | 2001               | 2002               |
|--|-------|--------|-------|-------|--------------------|--------------------|--------------------|--------------------|
|  |       |        |       |       | Proj <sup>1/</sup> | Proj <sup>1/</sup> | Proj <sup>1/</sup> | Proj <sup>1/</sup> |
| (In percent of GDP)                                  |       |        |       |       |                    |                    |                    |                    |
| Revenues   | 36.1  | 32.6   | 31.7  | 36.8  | 38.0               | 38.0               | 38.1               | 38.3               |
| <i>O/w</i> Tax revenues                              | 29.3  | 26.5   | 26.7  | 31.4  | 31.5               | 31.7               | 31.9               | 32.0               |
| <i>O/w</i> VAT taxes                                 | 6.7   | 6.7    | 8.5   | 8.5   | 8.6                | 8.6                | 8.8                |                    |
| Social insurance contributions                       | 7.9   | 6.9    | 6.9   | 7.7   | 8.7                | 8.7                | 8.7                | 8.7                |
| Nontax revenues                                      | 5.7   | 4.9    | 4.4   | 5.3   | 6.4                | 6.3                | 6.3                | 6.3                |
| Expenditures   | 42.4  | 45.2   | 34.2  | 35.8  | 39.5               | 39.4               | 38.4               | 38.9               |
| Non-interest expenditures                            | 27.8  | 24.9   | 25.8  | 31.4  | 34.6               | 34.7               | 34.5               | 34.4               |
| <i>O/w</i> Compensation                              | 4.6   | 3.5    | 3.7   | 4.7   | 5.5                | 5.5                | 5.6                | 5.6                |
| Subsidies  | 1.1   | 0.8    | 0.7   | 2.0   | 1.2                | 0.8                | 0.5                | 0.4                |
| Maintenance/operating                                | 5.5   | 4.9    | 6.3   | 5.7   | 5.4                | 5.4                | 5.3                | 5.2                |
| Social expenditures                                  | 10.8  | 9.1    | 8.5   | 10.9  | 12.7               | 13.5               | 13.5               | 13.4               |
| <i>O/w</i> Pension                                   | 8.0   | 7.0    | 6.3   | 8.3   | 8.1                | 7.9                | 7.6                | 7.3                |
| Capital expenditures                                 | 1.1   | 0.7    | 1.0   | 2.8   | 3.4                | 3.5                | 3.6                | 3.6                |
| Primary balance                                      | 8.3   | 7.7    | 5.9   | 5.4   | 3.4                | 3.2                | 3.6                | 3.8                |
| (Excluding costs of structural reform)               | 8.3   | 7.7    | 6.2   | 5.2   | 4.3                | 4.4                | 4.4                | 4.4                |
| Interest   | 14.6  | 20.3   | 8.4   | 4.4   | 4.9                | 4.7                | 4.4                | 4.4                |
| External   | 3.3   | 3.4    | 3.0   | 3.2   | 3.6                | 3.4                | 3.1                | 3.1                |
| Domestic   | 11.3  | 17.0   | 5.5   | 1.2   | 1.3                | 1.3                | 1.4                | 1.3                |
| Overall balance                                      | -6.3  | -12.7  | -2.5  | 0.9   | -1.5               | -1.5               | -0.8               | -0.6               |
| (Excluding costs of structural reform) <sup>2/</sup> | -6.3  | -12.7  | -2.2  | 0.8   | -0.5               | -0.3               | -0.1               | 0.0                |
| Financing  | 6.3   | 12.7   | 2.5   | -0.9  | 0.9                | 1.5                | 0.8                | 0.6                |
| External(net)  | -0.9  | -2.4   | -1.3  | -1.0  | -0.7               | 0.4                | -0.4               | -1.2               |
| Domestic(net, include IMF)                           | 7.0   | 14.9   | 0.5   | -1.5  | -1.0               | 0.0                | 0.0                | 0.9                |
| Privatization  | 0.0   | 0.0    | 3.3   | 1.6   | 2.6                | 1.3                | 1.2                | 1.0                |
| <b>Memorandum item:</b>                              |       |        |       |       |                    |                    |                    |                    |
| Nominal GDP (in old lev bn )                         | 880.3 | 1748.7 | 17055 | 21577 | 22010              | 23472              | 25216              | 27271              |
| Fiscal Reserve Account (% of GDP)                    | 0.0   | 0.0    | 7.8   | 9.2   | 11.1               | 11.8               | 10.1               | 7.0                |

Sources: Ministry of Finance, and IMF  
staff projection

Notes: 1/ Including the activities of the State fund for Reconstruction and Development (SFRD) and the Energy Resource Fund (ERF) which were closed with the approval of the 1999 budget.

2/ From 2000, costs of structural reform include projected additional costs of social security reforms.

**Table 1: State Guaranteed Credits, By Creditor, December 31, 1998**

| <i>million USD</i>                     | Negotiated<br>amount | Disbursed<br>amount | Amount<br>Outstanding |
|--|----------------------|---------------------|-----------------------|
| <b>Official creditors</b>              |                      |                     |                       |
| European Investment Bank               | 386.7                | 202.6               | 192.6                 |
| World Bank                             | 304.5                | 154.0               | 144.8                 |
| The Overseas Economic Cooperation Fund | 182.7                | 2.7                 | 2.7                   |
| EBRD                                   | 172.0                | 127.3               | 103.4                 |
| K F Arab Economic Development          | 40.1                 | 0.0                 | 0.0                   |
| USA government                         | 15.0                 | 14.9                | 14.9                  |
| Total official creditors               | 1,100.9              | 501.4               | 458.4                 |
| <b>Private creditors</b>               |                      |                     |                       |
| Siemens                                | 52.3                 | 0.0                 | 0.0                   |
| Nichimen Co                            | 6.4                  | 6.4                 | 4.8                   |
| Total private creditors                | 58.7                 | 6.4                 | 4.8                   |
| Total                                  | 1,159.6              | 507.7               | 463.2                 |

**Table 2: State Guaranteed Credits by Borrower, December 31, 1998**

| <i>Million USD</i>              | Negotiated<br>amount | Disbursed<br>amount | Amount<br>Outstanding |
|---------------------------------|----------------------|---------------------|-----------------------|
| <b>Public borrowers</b>         |                      |                     |                       |
| MRDPW-Transit roads             | 161.5                | 59.2                | 57.1                  |
| Bulgarian Telecommunication Co  | 133.2                | 130.1               | 114.8                 |
| Port-Bourgas                    | 117.0                | 0.0                 | 0.0                   |
| Sofia Airport                   | 101.5                | 0.0                 | 0.0                   |
| Bulgaria – energy               | 93.0                 | 43.0                | 36.9                  |
| Railway rehabilitation          | 91.7                 | 57.3                | 57.3                  |
| Air traffic control             | 67.4                 | 46.9                | 46.9                  |
| NEC                             | 63.8                 | 42.4                | 33.9                  |
| Water companies restructuring   | 53.6                 | 11.6                | 11.6                  |
| Ministry of Health              | 52.3                 | 0.0                 | 0.0                   |
| Bulgarian State Railways        | 45.0                 | 26.6                | 26.6                  |
| NRA – project transit roads     | 43.0                 | 43.0                | 33.6                  |
| Social insurance administration | 22.5                 | 1.4                 | 1.4                   |
| Ministry of Agriculture         | 15.0                 | 14.9                | 14.9                  |
| MA (project wholesales markets) | 6.7                  | 1.9                 | 1.9                   |
| Bulgarian National Television   | 1.0                  | 1.0                 | 0.3                   |
| <b>Total public borrowers</b>   | <b>1,068.2</b>       | <b>479.4</b>        | <b>437.3</b>          |

**Table 3: State Guaranteed Credits, by Borrower, as of December 31, 1998  
(continued)**

| <i>million USD</i>                  | Negotiated<br>amount | Disbursed<br>amount | Amount<br>Outstanding |
|-------------------------------------|----------------------|---------------------|-----------------------|
| <b>Private borrowers</b>            |                      |                     |                       |
| KCM, S.A.                           | 48.7                 | 1.8                 | 1.8                   |
| Eliseina, LTD                       | 17.0                 | 0.8                 | 0.8                   |
| Private investment and Export       | 14.1                 | 14.1                | 13.2                  |
| VMZ-SOPOT                           | 6.4                  | 6.4                 | 4.8                   |
| Banks – Mediators APEX              | 5.2                  | 5.2                 | 5.2                   |
| <b>Total private borrowers</b>      | <b>91.4</b>          | <b>28.3</b>         | <b>25.9</b>           |
| <b>Total (public &amp; Private)</b> | <b>1,159.6</b>       | <b>507.7</b>        | <b>463.2</b>          |

Notes to Tables 2 and 3:

1/ Data is in accordance with the Bulgarian National Bank (BNB) register of government and publicly guaranteed debts based on official MoF information on ratification of NA credit agreements and on official MoF information on credit servicing.

2/ USD equivalent is based on central exchange rates of the relevant currencies against BGN quoted by the BNB on 5 July 1999

3/ 16,370.64 activated state guarantee on APEX loan. Interest is paid by sources of MoF. Data is submitted by BNB International Relations Directorate.

## How to Build Risk Management System for a Government?

What are the key principles for government to manage its fiscal risks? Experience in both the public and private sector suggests that following two tasks are critical for governments to ensure future fiscal stability and allocative efficiency in the use of future as well as present public finances. First, understand the government risk exposure and build risk awareness. Second, enforce accountability for dealing with risks. Below we summarize the specific questions that policy makers will need to ask to bring government fiscal performance fully under their control. Further research is needed to elaborate on some of the recommendations below.

### *Questions to ask with respect to the already existing fiscal risks:*

- What are all sources of fiscal risks?
- What are the sources of future possible increases in government obligations (direct and contingent, explicit and implicit liabilities)?
- What are the sources of future possible reductions in the value of government assets and revenues (explicit and implicit risks to assets and revenues)?
- What are the types of these risks (applying the Fiscal Risk Matrixes)?
- What are the limits of government responsibilities for implicit liabilities and for conditions of sudden revenue and asset shortfalls?
- How sensitive are the risks to their underlying variables?
- What is their expected fiscal cost and value at risk (e.g., applying stress-testing)?
- To which risks is the government over-exposed?
- To reduce over-exposure, is it possible to redesign government obligations, and asset and revenue policies, and to reorient its role?
- How to make the Fiscal Risk Matrixes public and benefit from transparency? Which implicit liabilities, if any, should remain undisclosed and why?
- Should the government build reserve funds or use hedging instruments to deal with possible future obligation increases and revenue and asset shortfalls?
- How to hedge the government's overall risk exposure that is emerging from its entire portfolio of fiscal risks? Less optimally, how to hedge specific risks?
- If hedging is not an option or not sufficient to offset government risk exposure, how large reserves should be with respect to future possible? Should the government purchase insurance or re-insurance instead?

### *Steps to build a new risk management system:*

- Seek to ensure that government has the cash available to meet its obligations and deliver.

- Establish analytical framework for government to regularly analyze its fiscal risks, including the future possible increases of government obligations and shortfalls in government revenues and assets. Regularly update the Fiscal Risk Matrixes in the budget process.
- Seek private sector solution to any request for government support to avoid risk exposure.
- Analyze expected and maximum likely fiscal cost of obligations and expected reductions in future revenue and asset values prior to making any policy decision.
- Design government support, revenue and asset policies so to achieve the policy objectives with minimum government risk exposure and without inducing moral hazard in the markets.
- Outline a strict policy for hedging government fiscal risks (future obligation increases and asset-revenue shortfalls) according to the government risk management capacities. Require hedging decisions done in the context of the entire portfolio of all fiscal risks. Regulate the possible use of risk-offsetting bonds and financial derivatives. Discourage dynamic hedging strategies.
- Outline reserve policy with respect to fiscal risks on both liability and asset-revenue fronts according to the government ability to absorb shocks. Determine government ability to absorb realization of fiscal risks according to its market access to borrowing (the depth of government securities market). In reserve policy, specify requirements on the reserve amounts (proportionately to government risk exposure), management (investment of reserves), and on the use of reserves (only to cover the realization of risks that have been identified *ex ante*). Consider new possible institutional approaches of contract-based or market-value based reserve management.
- Outline principles for government to purchase possible insurance and re-insurance under competitive terms.
- Establish a medium-term fiscal framework to optimize government management of expenditures, obligations, revenues and assets.
- In fiscal reports, require a statement of contingent liabilities, tax expenditures and other fiscal risks.
- Reflect on future possible realization of existing fiscal risks in the medium-term fiscal cash projection scenarios and medium-term fiscal strategy.
- Before designing new government support, revenue or asset policy, consider what is and how to limit government risk exposure. For support (budget, contingent liabilities, and tax expenditures), evaluate the fit with government priorities. Minimize and announce clearly the limits of government responsibilities to reduce moral hazard. Require public-private risk sharing.
- Make provisions for fiscal risks already in the year when the government takes on the risk by transferring the expected fiscal cost from the budget allocation of the related sector to a reserve fund (or to cover the cost of hedging and/or re-insurance).
- In execution, stick to the present limits of government support. Before fulfilling an implicit obligation, assess the impact on moral hazard in the markets.
- Monitor fiscal risks, their sensitivities, and expected and maximum likely fiscal costs.
- Monitor reserve adequacy.
- Monitor hedging strategies.
- Ensure sufficient transparency and controls in government risk management.

- Involve the state audit in assessing the quality of government risk analysis, reserve adequacy, risk management, and execution of risks that have realized.
- Explain publicly any departures from originally envisaged realization of fiscal risks as well as from the originally envisaged budget.
- Ensure adequate monitoring of fiscal risks that may arise from both the public and private sectors.

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